

COAL AGE

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The Importance of Details in Cost-Keeping

TRAINING in statistical control, if tempered by an adequate appreciation of local peculiarities and if not carried to an extreme which substitutes statistics for judgment instead of using them as aids to judgment, should equip the coal operator the better to meet his local problems. Certain fundamental principles should have application universally. Certainly nothing is more fundamentally important than an accurate knowledge of facts.

The above, save that the words coal operator have been substituted for railroad manager, are those of William J. Cunningham, of Harvard University, writing in the *New York Evening Post* on the J. J. Hill system of cost-keeping as the basis for control of railroad operations. Practically everything he says with respect to the use of knowledge in operating railroads applies with equal force to operating coal mines. Our attention recently has been focused on this subject by a communication from a coal operator who says that too few companies have a supply account to which supplies are charged when purchased and by means of credits to which the supplies are charged out to operating costs as they are used. It is argued that heavy purchases last year were carried into current costs although not used at once, with the result that costs were inflated, and that today, using those materials, costs are figured too low, thereby impairing the judgment of the operator in the matter of what he should be getting for his coal.

Operators, basing contract prices on such cost figures, will find themselves at a disadvantage when they again have to restock. Those who have kept books to show actual supplies sent below are not being fooled although they may be quoting just as low prices as the other fellow. Without question, the general practice prior to 1916-1917 was to charge a great many items of equipment and supplies to capital account which now, under Treasury rulings, are charged to current operation, because they "do not reduce cost or increase output." Business men, in the coal industry and in other lines as well, quite generally made liberal investment in supplies and equipment during the periods of high prices for their product, both because they considered the possible need of the material and because the tax policy of the government encourages such a course.

Professor Cunningham lays emphasis on the importance Mr. Hill gave to details and ascribes much of his success as a railroader to his ability to inspire every official and employee to respect the little things that go to make up the big whole. It may be that the purchase of hay for mine mules, for instance, is a small detail of costs, but if the payment for three months' requirements is charged into one month, costs are at once thrown out of line. We do not argue that

a producer of coal should never sell his coal below what it costs him—the point is not debatable—but we do stand with those who contend for better cost-keeping even in such apparently small matters as material accounts, for if one sells with a full knowledge of book costs as well as actual out-of-pocket costs, he is a progressive, modern business man.

The Coal Industry Might Be Worse Off

STATISTICS of employment in selected industries in June, recently published by the Bureau of Labor Statistics, show that ninety-four bituminous coal mining companies employing 24,654 men in June, 1920, had 23,462 men on the payrolls in June, 1921, a decrease of 4.8 per cent. Of the fourteen industries for which similar data are shown, all but four made a worse showing. Cigar manufacturing recorded a decrease of less than 1 per cent, and three branches of the textile business, cotton manufacturing and cotton finishing had decreases of less than 1 per cent, while the woolen industry showed an increase of nearly 4 per cent in employees on the payrolls. Metal, leather and paper lines reported declines in employment, compared with a year ago, ranging from 13 to 41 per cent.

The same companies that reported a decrease of less than 5 per cent in number of men employed showed during June of this year as compared with the same month of last year a decrease in total payroll of 21.6 per cent, from \$1,861,533 for the half month to \$1,460,027. Since but three of the ninety-four coal companies reported wage reductions, the decrease in per capita earnings of the coal-mine employees of 17 per cent was due to shorter working hours, the result of lessened demand for coal.

Comparing June with May, bituminous coal showed the largest increase in dollars paid, from \$1,249,629 to 21,390 men in May to \$1,396,982 to 22,467 men in June, a gain of 5 per cent in number of men and 11.8 per cent in payroll cost. Men's ready-made clothing and leather were the only industries to show larger gains in men at work. The per-capita earnings in June were 6.4 per cent greater than in May, despite the fact that the entire forces at two of the mines included in these figures had wage reductions of 20 and 15 per cent. In the iron and steel industry wages from May 15 to June 15, 1921, were reduced from 10 to 21 per cent; some of the automobile plants reported wage decreases of 7 to 10 per cent.

As the evidence accumulates it is becoming more apparent that the coal industry, taken as a whole, has suffered no worse in this business depression than the average, and in many respects has fared better. The unfortunate aspect, however, is that mine labor which has taken wage reductions in step with the requirements of readjustment is working while those who refuse to even consider the matter are idle.

Soft vs. Hard-Coal Methods

PRESUMABLY the bituminous operators who this week visited the hard-coal regions expressed many fervent thanks that conditions did not make it necessary or advisable at present to erect such formidable structures as breakers for the preparation of their coal. A bituminous coal preparator, producing a comparatively unprepared product, is a relatively simple contrivance compared with the stupendous structures that deliver anthracite to market in ten different sizes. The bituminous operator experiences difficulty enough in keeping a balance with three or four sizes which at different periods of the year have such a variant demand. In fact many wish that they were back to the old run-of-mine days, when an order for coal meant an order for the whole product coming to the surface and not an order for part and too often little or no sale for the rest. To them the fact that slack is in slow demand brings sad memories of the good times when coal was coal and they had no call for special sizes which their mines could only produce by virtue of bringing out a lot of coal of the no-market variety.

Certain it is, however, that the manufacture of sizes brings a better price for the sizes more greatly desired and so pays for the breaker that prepares them and interest for the storage. The public wants its hard coal sized and meticulously cleaned and has to pay for it whether it will or no, and perhaps it may soon demand that its bituminous coal undergo the same discriminating treatment. Should it do so the price will have to be made so that the operation of such preparation equipment will be profitable.

Economical burning requires standardization of product. Extremely fine coal mixed with coarse, under forced draft is blown out of the stack, as can be seen by the most negligent observer who travels on a train hauled by a locomotive burning run-of-mine coal. The draft need not be as heavy when a sized product is used and much coal and acres of forest land will be saved. Large lumps are not desirable for use in a furnace even when hand-stoked, and it is cheaper and easier to crush them in a pair of rolls than to do it with a sledge. Large lumps of soft coal will burn and will break, but still the fact remains that they do not burn efficiently or break automatically, and it would be better to deliver what the consumer needs rather than what he can put up with. Slack will burn in an ordinary fire but it does not give either maximum efficiency or maximum capacity when mixed with lump coal. In short, soft coal does not have to be sized, but in almost all cases it would do better work if it were reduced to a product of uniform size. Hard coal *must* be graded but for best results soft coal *should* be graded also.

Time was when bituminous operators looked askance at the picking table, viewing it as a new and unnecessary device loaded on them by the exigencies of competition. But the public had to be pleased, and the picking table stayed and prospered, especially in times when, because buyers were few and sellers many, the buyer was master. Quality of product is going to count more and more, and it is useless to be the last to seek to satisfy the public need.

Freight rates are high and it is becoming more and more necessary to pay for freight more than for coal. Consequently slate and bone are being thrust out of commerce. As it becomes more essential to clean the

coals, and as picking must be more carefully performed, all sizes must be cleaned, picking by machine, by water or by air becomes more and more necessary. This is the really significant matter about this year's meeting of the American Institute of Mining and Metallurgical Engineers in Wilkes-Barre and the presence of bituminous operators at its sessions.

DENYING THAT HENRY FORD has wrought a miracle in the management of the Detroit, Toledo & Ironton R.R., *Railway Age* summarizes the facts about the road in part as follows:

"From September to December, 1920, inclusive, after the present railway freight rates were fixed, the D. T. & I. handled an average of 49,246,000 ton-miles of revenue freight per month and had freight earnings averaging \$493,800 a month. In the months of April, May and June, 1921, the road handled an average freight business of 37,093,000 ton-miles a month and earned from it an average of \$694,203 a month. In other words, its average freight business in these three months was *almost 25 per cent less* than in the last four months of 1920, while its average monthly freight earnings were *over 40 per cent greater*. In the last four months of 1920 its average rate was 1c. per ton per mile. The average rate per ton per mile in April, May and June, 1921, was 1.88c., *88 per cent greater* than in September, October, November and December, 1920. The average rate of all the railways in the country is only 1.23c.

"If no change whatever had occurred on the D. T. & I. except this enormous increase in its average rate per ton per mile its financial results would have been revolutionized. To what was this remarkable increase in the average rate per ton per mile due? Chiefly to two things: First, to a great change in the character of the traffic handled. Mr. Ford began giving his railway practically all of his freight business; and the freight handled directly and indirectly for his motor works consist largely of relatively high-grade commodities which pay a rate much higher than the average. Meantime, the amount of coal handled by the railroad greatly decreased. Coal being a bulky and cheap commodity, it pays a rate much smaller than the average. This change in the character of the traffic alone would have caused a large increase in the railway's average rate.

"Secondly, the D. T. & I. has been able to use the large volume of traffic originated by the Ford interests to secure larger divisions of the through rates on all traffic hauled partly over its line and partly over other railways, and the great bulk of the D. T. & I.'s business consists of this through traffic.

"Furthermore, the management of the D. T. & I., in common with all the other railways, was able, partly because of the smaller traffic handled by it and partly owing to other causes, to make large reductions in its operating expenses.

"The only really great change which had been made on the D. T. & I. up to July 1 was in the conditions which determined its average rate per ton per mile. But how about the reduction of 20 per cent in its local rates and the advance in the wages of its employees which have been so widely advertised? Neither of these went into effect until July 1 or later, and therefore neither of them had anything whatever to do with the increases of the railway's net earnings."

Automatic Substations Save Labor, Act Promptly and Insure Equipment Against Roasting*

Placing Substations Near Pumps or Hoists Saves Labor but Causes Neglect of Substation and Often Copper Waste or Voltage Loss—Use Automatic Reclosing Circuit Breaker in Place of Several Contactors, Each Cutting Out Part of Resistance

BY R. J. WENSLEY†
East Pittsburgh, Pa.

THE use of small substations for the supplying of 275-volt energy to the locomotive and cutting machines in coal mines is a well-established practice. A few years ago, when labor costs were lower, these substations were located as near to the load as possible, and an operator was provided for each station. This practice has now become so expensive that substations are being located with reference to other mining machinery, such as hoists or pumps, so that one operator can look after both.

Sometimes the substation is operated by one whose duties make him traverse quite a large area. In such cases the interruption of alternating-current supply may produce a long interruption in the direct current, as the station cannot resume service until this man reaches it. Such interruptions interfere seriously with production and may easily counterbalance the supposed saving gained by such operating methods.

GROUPING OF SERVICE MAY CAUSE COPPER LOSS

The grouping of substations for convenience in operating may also result in excessive copper loss and consequently poor trolley voltage with its attendant evils of low locomotive speeds and increased locomotive motor maintenance. The speed of the coal-cutting machines also will be reduced. By relieving the substation of its burden of the operating labor cost, the most economical location, from an electrical standpoint, may be chosen.

The matter of machine insurance also should be considered. If an attendant is caring for several kinds of equipment, he cannot watch the machine continually for signs of trouble; therefore continued overload, phase failure, low alternating-current voltage, bearing trouble, etc. may result. Some partly automatic equipments have been installed; these have protection against low voltage, reverse current and bearing trouble and are provided with automatic reclosing circuit breakers. This is a step in the right direction but it does not go far enough to give first-class machine insurance.

The saving in maintenance costs often is the smallest item, when considering the automatic substation as machine insurance. In most instances when the coils in a machine are roasted out, due to continued overload or to operation under abnormal alternating-current conditions, the cost of the loss in production will easily exceed the repair bill. Where the mine is not too deep, automatic control allows the substation to be installed above ground, but the location depends largely on local conditions.

In some cases the topography of the country is such that an inside station would be much more accessible

than an outside one, and vice versa. The most economical method of getting current into the mine is by the use of overhead lines and drill holes directly above the desired point of feed. If the substation is installed in the mine, there will be a triplex cable in the drillhole, usually working at 2,200 volts, although a few mines use higher voltages. If the substation is installed on the surface, the direct-current cable is placed in the hole.

The surface location has many advantages, one being the lower installation cost. Inside installations usually require concrete and steel work and in many cases considerable excavation of rock. The substation location must be such as to receive an ample supply of cool, fresh air. The control wiring must be carefully done and usually with lead-covered cable, for sulphur water often is present. The installation of the machine is frequently difficult as it must be dismantled so that the largest piece can be handled by the hoist or to pass through the available openings. If the substation be placed on the surface, an inexpensive house may be used and the machine may be set on the floor just as

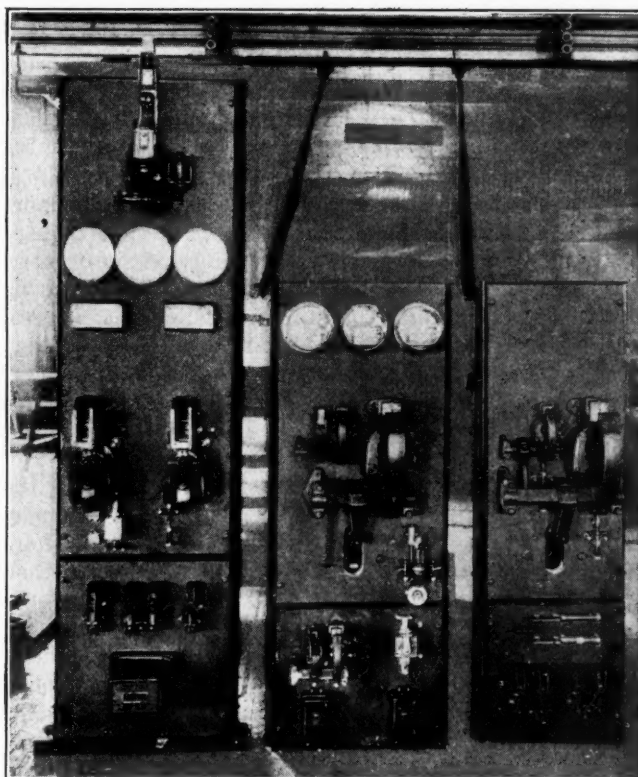


FIG. 1. FRONT OF CONTROL EQUIPMENT AT THE AUTOMATIC SUBSTATION

Equipment is not large or costly that replaces an attendant, and it has the advantage that it is screwed into the switchboard, where its duty lies, and can't wander away from the point of duty.

*Article entitled "Automatic Substations Used in Coal Mining," read before the American Institute of Mining and Metallurgical Engineers at the Wilkes-Barre meeting, Sept. 12 to 15.

†Switchboard Engineering Department, Westinghouse Electric & Manufacturing Co.

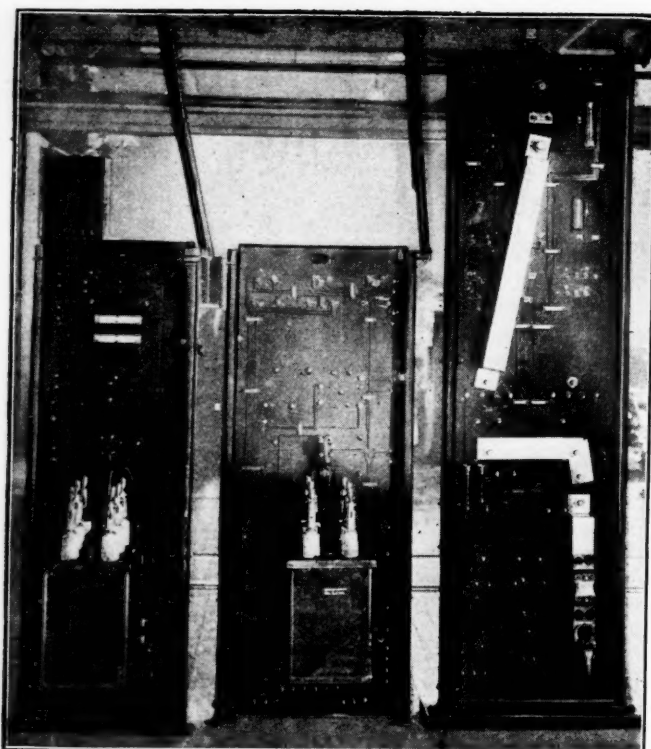


FIG. 2. REAR OF CONTROL EQUIPMENT AT THE AUTOMATIC SUBSTATION

Seen from behind, the regulating equipment is even less imposing than from the front.

it comes from the factory. There will be no dampness to cause deterioration of the equipment, and no ventilation difficulties; also expensive runs of high-tension cable are avoided, as the lines may be run overhead.

The most convenient method of automatic operation is by remote control through the high-tension feeder. For the most reliable operation, it is necessary that each substation have an independent feeder. Then the stations may be started by closing the oil switch at the point of origin of the feeder; an ammeter installed at this point will show the attendant what is happening at the substation.

If to reduce the first cost it is necessary to put more than one station on one feeder, a series of time-element relays can be used to start the machines at short intervals, so as to avoid the surge otherwise caused by simultaneously closing the starting switches of several sets. The stations may be started also by voltage relays connected to the trolleys and shut down by under-current relays in the machine circuits. This is a more expensive method and is warranted only when the power cost is high.

If desired, time switches may be used to start the stations according to a definite schedule. Control may be had from pilot wires run to convenient points where attendants are always available. The simplest method is the use of a starting button at the door of the substation, to be operated by the first man in and shut down by the last man out. This method, while inexpensive, is cumbersome and not to be recommended except in special cases.

In designing automatic equipment for mining service, the manufacturer must take into account the usual lack of technical training in the maintenance crew and must seek extreme simplicity. The installation of a mining substation usually is of a semi-permanent character and operators are reluctant to install expensive

or complicated equipment that, in a relatively few years, must be moved to a new location or scrapped.

At first the tendency of the manufacturers was to offer an elaborate equipment of the railway type, modified only as to voltage; later, as the operating conditions were not as severe and the standard of service was not as high as in the railway field, a special line of automatic control was developed for mining service.

For the control of a 200-kw. synchronous motor-generator set this equipment is on two panels. The wiring is self-contained so as to avoid the necessity of complex control circuits apart from the panels. The only wiring, apart from the main motor and generator leads, is the control circuit from the control transformer and the bearing thermostat connections. The panels are wired at the factory so as to reduce the installation cost to a minimum and to avoid errors.

RECLOSING CIRCUIT BREAKER PROTECTS LINE

This equipment is designed to operate on an individual high-tension feeder; it starts whenever alternating-current is thrown on the line and is shut down by opening the alternating-current feeder. The direct-current generator is connected to the line through an automatic reclosing circuit breaker, which opens on short-circuit or excessive overload and recloses when the cause of the trouble is removed—as, for instance, when a broken trolley wire is picked up or removed from the rails or the locomotive operators throw off their controllers.

It is possible to substitute for this breaker the standard railway equipment, consisting of a number of contactors each short-circuiting a portion of a current-limiting resistance. These contactors are arranged to open one at a time until the overload is limited to within the commutating capacity of the machine. By using this scheme, the locomotives are kept in motion at reduced speed until the current drops below the setting of the overload relays, when the contactors will again close, thus cutting the resistors out of circuit. This equipment costs somewhat more than the type using the automatic reclosing breaker and therefore will not be in as great demand.

SPECIAL FEEDERS FOR COAL-CUTTING MACHINES

In large operations, the best service insurance is obtained by the use of a series of automatic section switches to isolate portions of the trolley, thus allowing the remainder of the operation to proceed. Where feasible, additional reliability may be insured by running separate direct-current feeders from the substations for the coal-cutting machines. This will prevent stoppage of the actual mining operations in any given section in case of trouble with the trolley.

There is a feeling among coal operators that automatically-controlled substations are too expensive for the average mine. This is not at all true. A 200-kw. set with 2,200-volt 60-cycle synchronous motor and 275-volt direct-current generator with manual switching would sell at the present time for approximately \$6,150. The same machine with the simplest type of automatic control will sell for approximately \$8,350. This difference of \$2,200 capitalized at 20 per cent per year will give an annual charge of \$440, which is far less than the wages of a man to operate the station for even one shift per day. If the operating labor is kept below this point by giving only occasional attention to the station, serious interruptions are invited, as previously

mentioned. The saving is not only in the wages but also due to the fact that the automatic station does the right thing at the right time much better than could possibly be done by manual operation.

The first coal mine to adopt automatic control for substation equipment is that of the Lincoln Coal Co. at Nanty Glo, Cambria County, Pa. This is a 200-kw. synchronous motor-generator set located in a room about two miles from the mouth of the drift and about 500 ft. under the surface. The 2,200-volt three-phase power is supplied from the surface through a 5-in. drill-hole in which a triplex cable is installed. The station

is started by the first locomotive runner in the morning and is shut down by the last man trip out at night. This is accomplished by a single small knife switch. It operates continually during the day. If alternating current should fail, it will shut down, but immediately after the alternating-current service is restored, the station will start and go on the line in a few seconds. This one feature alone, in a busy mine, warrants the slight extra investment in the automatic equipment. Figs. 1 and 2 illustrate the front and rear of the control equipment of an automatic substation installed during the summer of 1921.

Development of Ingenious Methods by Which Anthracite Is Cleaned of Impurities and Sized for Market—II*

Picking Tables and Jigs Have Been Supplemented by Mechanical Pickers, Which Are Chutes with Gaps Into Which the Slower-Moving Slate Falls, and Steeply-Inclined Belts Down Which the Coal Rolls

BY DEVER C. ASHMEAD
Kingston, Pa.

ABOUT 1870 the picking table was introduced, being first used at the Hill & Harris colliery at Mahanoy City, Schuylkill County. The introduction of these tables for use in coal preparation was the result of a series of experiments by the firm above named. After a thorough trial of the old methods and many new ones, they adopted the table as the most perfect and reliable means they could find. The exact type of table selected is not stated, although it is probable that it had some positive movement and was driven by machinery.

The next important improvement in the preparation of coal was the introduction of the mechanical picker. This was a jig and was introduced in 1871 or 1872. The jig did not force its way into the Wyoming field until a much later date. This was because the coal in the upper region was much cleaner and drier than that produced in the middle and lower fields. The operators did not look with favor upon the wetting of their coal, for they felt that boys could satisfactorily remove what little dirt it contained. Labor was comparatively cheap, so they could not see why they should install expensive machinery that might or might not prove satisfactory.

In the lower region conditions were entirely different. Here the coal came from the working places wet and covered with fine mud, so that it was almost impossible to tell which was coal and which slate without washing off the fine material. As long as this had to be done in any case, it was determined that if possible it would be better to separate the coal from the slate at the same time that the coal was cleansed by water. This accounts for the development of the jig in those portions of the field where the measures pitch steeply.

From 1872 until some time in the 80's no inventions of merit modified the methods of preparing coal. However, the existing types of machinery were improved, and better results were obtained. In 1884 the Pennsyl-

vania Coal Co. built the Old Forge breaker, this plant being one of the most modern of its day. Fig. 10 shows the old breaker as it was originally designed.

In this breaker the coal without separation was passed first through the rolls, going thence to two sets of revolving screens. These screens were 5 ft. in diameter and 16 ft. long. It is presumed that in these screens lump, steamboat and broken coals were separated, the fine material passing through to the pentagonal screens below, which had the same diameter as the first set and were 10 ft. long. They prepared stove, nut and pea coal, the fine coal going to the bank. This breaker is the first in which I have been able to find the use of the pentagonal screen, although it is possible that they were used before this period. This type of screen did not prove satisfactory, as it broke the coal overmuch. Even now, however, there is one set of these screens operating in a breaker near Wilkes-Barre.

As may be seen, little difference exists between the

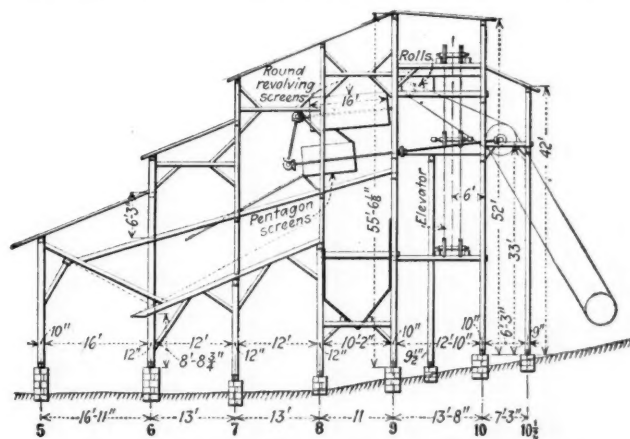


FIG. 10. SECTION OLD FORGE BREAKER OF PENNSYLVANIA COAL CO.

Coal without separation went to the rolls and thence to two round revolving screens and thence to two of pentagonal shape. It is surmised that on the first screens, lump, steamboat and broken were separated and in the second stove, nut and pea, the fine coal going to the culm bank.

*Second installment of article presented before the Institute of Mining and Metallurgical Engineers, Sept. 12, at Wilkes-Barre, and entitled "Advances in the Preparation of Anthracite."

were removed from the coal as soon as it was dumped and only the large sizes were sent to the rolls to be crushed. In this breaker as at Old Forge we find that all the revolving screens were driven by gears and the rolls were driven by belts. Here also the pentagonal screen was employed. In all, fourteen revolving screens were installed as well as two rolls and one set of elevators.

No provision was made to store coal at the head of the breaker so that there would be a regular supply, neither was any attempt made to feed the coal to the screen bars in a regular manner. The coal came in jerks and spurts that greatly interfered with its preparation. Although this breaker was built at a time when shaker screens were making their appearance they were not used at this operation, showing that they were not then considered to be sufficiently perfected to warrant their installation.

COXE SCREEN HAS CAPACITY AND EFFICIENCY

Just previous to the introduction of the shaker screen Eckley B. Coxe, of Coxe Bros., Inc., of Hazleton, invented the gyratory screen, which this firm used in its preparation plants for a number of years. These screens proved satisfactory as to sizing and capacity but their maintenance cost was high owing to their unbalanced vibration.

The Anthony shaker screen was among the first built but this was preceded by a shaker that was supported on rollers and operated at an extremely high speed. The Anthony shaker was hung by wrought-iron rods as are present-day shakers, but the suspension members were fastened to the shaker by a pin and the top connection was a ball-and-socket joint.

In the Parrish shaker, which is the one in common use

at the present day, a rigid attachment is used. The present type of shaker was not fully developed until 1907.

About the same time that the shaker was introduced the mechanical picker was invented, and a revolution in breaker design occurred. The object sought by the mechanical picker was to obviate hand-picking. Many types of these machines were invented. The Ziegler picker, built about 1890, was the first to make its appearance. It was the forerunner of all the "jump" pickers, and from it the many other designs involving the same principle have been evolved. In order to cause the slate to fall through the slot in the picker and allow the coal to pass over, a revolving roller was first used.

THOMAS PICKER USES A SLAB OF SLATE

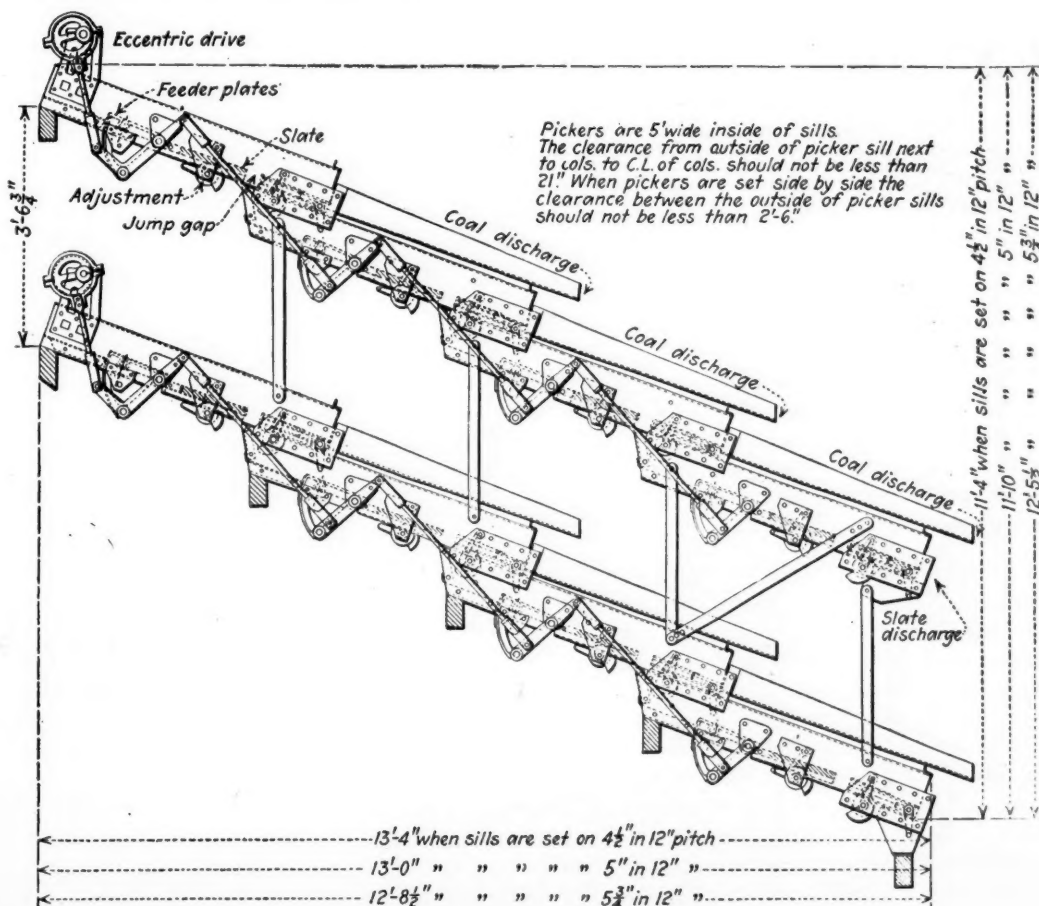
This device was followed by the Thomas picker, which used a slab of slate over which the mine product had to pass. Friction between the slate slab and the slate in the coal, of course, was greater than between the slab and the coal. The slate accordingly was retarded as it passed through the picker and fell through the slot, whereas the coal, not being retarded as much, leaped over it. The Thomas picker had only one slot and probably was introduced into the industry about 1895. It was followed in the next year by the Emery picker, which worked on the same principle but was a multiple-slot machine. This device has been improved from time to time and now can be regulated to handle widely-varying materials.

Other inventors have worked out pickers operating on the same principle as the Emery but embodying various improvements. Among these is the Devers picker, shown in Fig. 12. Mason and Allen in 1911

FIG. 12.

Devers Picker

This machine is a slot-type of picker, dependent on the principle that in sliding down an incline, flat material goes slowly and rounded material, rolling over and over, goes with greater rapidity. An irregular body of nearly circular shape will roll quite readily when once it begins to revolve and yet may refuse to budge when put carefully on an incline. The peculiarity of this picker is in the method of operation, the feed being raised or lowered by means of a cam. The angle of the slate slabs likewise is adjustable.



invented a picker of the Emery type as did also a Mr. Farr.

Many devices have been invented that will remove flat slate from coal. Among them is the Mowry, which is now in use at the Kingston Coal Co.'s No. 4 breaker. This picker operates as a shaker. The bottom plate is cut in a number of places, the cuts extending about half way across the shaker. The edges of these cuts are turned down, making slots. As the coal and slate pass over this plate the pieces of coal, being thick and rounded, do not pass through the slots but roll over them. The slate, however, when it reaches these slots tips up and slides through them, being thinner than the width of the opening. Of course any flat pieces of coal naturally pass through the slots along with the slate. It is necessary, therefore, to pass the flat and the rounded product of the Mowry picker over one of some other type. This machine was invented in 1905. In 1910 another flat-slate picker was invented by Colvin.

The Norman flat-slate picker differs from any so far

that has been described. This device consists of a number of rollers so spaced as to permit the flat particles of slate to pass through while denying passage to the rounded coal. Each roller revolves in the opposite direction to that adjoining it. The slate is thus caused to tilt and drop through the openings. The rollers are sufficiently inclined to cause the coal to move across them endwise. These pickers are still used to some extent, but as all mechanical pickers seem to be going out of use they also are passing away.

One other device of this kind deserves mention, namely, the Ayers picker. This consists essentially of a tilted traveling belt onto one side of which the unpicked material is fed, the belt traveling in an upward direction. Meanwhile the slate, being heavier than the coal and having a greater frictional resistance upon the belt, is carried up and discharged at the top. The coal rolls down the belt and leaves it at the bottom. This picker is still being used in a few places. Probably the best known of all pickers is the anthracite spiral. This came into extensive use about 1904.

Hungarians Successfully Conduct Co-operative Mine In Kentucky, Having Two Million Dollars Invested

Bridge Had to Be Built Over Tug River—Coal Is Dumped Inside Mine and Is Brought Out by Conveyor—Employee-Shareholders Unanimously Accept 30 Per Cent Wage Reduction

BY J. R. HAWORTH
Huntington, W. Va.

ORGANIZERS, officers, directors and employees of the Himler Coal Co., operating in Martin County, Kentucky, agree with one voice that that company has solved the labor problem. With the coal-producing industry distraught in its struggle for years with this question, with this plan and that expedient, this theory and that system attempted and abandoned as impractical and unavailing one after the other in an impressive array of failures in final solution of the labor question, the cheerful pronouncement of the Himler company that the answer has been found is intriguing, at least.

The company claims for itself the distinction of being the only co-operative coal-mining company in America. To prove that the company has solved its labor difficulties it points to its history covering a period of two years, and recites the difficulties already overcome.

STOCKHOLDERS VOTE FOR LOWER WAGE SCALE

The history of industry is littered with the wreckage of co-operative schemes of various sorts which have failed and have been forgotten. Yet the Himler plan, its sponsors say, has been a success for two years—a recent stockholders' meeting, in fact, voted unanimously for a 30-per-cent reduction in wages following submission of a report of the treasurer, and the company continues not only to mine coal at the low market price but has increased its capital to \$2,000,000 for extension of its operations.

Few less promising places in the United States could

be found at this time for an experiment in labor problems than Himlerville, Ky., the home of the Himler Coal Co. Himlerville is being built in the hollow formed by Buck Creek, which flows into Tug River at Warfield, Ky., about two miles from Himlerville. Warfield is a village on Tug River opposite Kermit, W. Va., and Kermit is on the selva of the Williamson coal field, about twenty miles from the town of Williamson itself.

There are windows in the village of Kermit shattered from recent volleys from the hills on the opposite side of Tug River, a phase of the fierce industrial struggle which has torn the Williamson field for the past two



HIMLER COAL CO. TIPPLE WITH ITS 45-DEG. SLOPE

This shows the tipple before it was entirely completed. The slope is so steep and short as to be what our metal-mining brethren would call an inclined shaft.



BOARD OF DIRECTORS OF THE HIMLER COAL CO.

The president, Martin Himler, is the third from the right in the rear row. He has a black tie and white shirt. Martin Himler as editor of a Hungarian newspaper in New York, the *Magyar Munkaslapp*, was greatly attracted by mining men, capitalist and mine worker alike, and was much interested in the efforts of his fellow countrymen to better their condition. This experiment in co-operative mining is the result.

years. In the intense fight for unionization on the one hand and resistance to unionization on the other, the Himler operation has been untroubled. The story is not uninteresting.

A little more than two years ago Martin Himler, a naturalized Hungarian, conceived the plan of organizing a co-operative coal-mining company. Following up this idea, he formed the Himler Coal Co., capitalized at \$50,000. Stock was sold to men of his own native land. A small mine in Mingo County, West Virginia, was purchased, and operations were begun. The mine had been a failure for previous owners. The seam was thin and working conditions were difficult. Yet the new company, employing its own stockholders, made money from it, and ultimately sold it at a profit.

Seeking larger fields, the company invaded Martin County, Kentucky. That county therefore had been a veritable wilderness. Tug River blocks its only outlet to a railroad. The obvious thing to do was to bridge the river. The new co-operative company, the laughing stock of coal operators throughout the Williamson field, faced its problems with optimism. A reorganization increased the capital stock of the company from \$50,000 to \$500,000, and the new stock was promptly subscribed by nearly fifteen hundred stockholders in the United States and in Europe.

A tract of approximately twelve hundred acres, in

which lay the Warfield, or No. 2 gas, seam was under lease. An opening was started; contracts were let for erection of forty-five houses; attention was turned to bridging the river. Difficulties encountered in this project included the discovery of beds of quicksand where solid rock should have been. The original estimated cost of the bridge was \$25,000. The structure was finally completed at a total cost of about \$300,000. First shipments of coal were hauled over the new structure on July 1.

Meanwhile the new tippie was being built. Erected by the Link-Belt Co., it contains novel features, among these being the installation of a scraper-type conveyor running on a 45-deg. slope to the loading pit in the mine entry. The company declares no other successful installation of a scraper-type conveyor has yet been made on such a steep slope.

The novel features, however, are not confined to the physical equipment of the company. Its organization is unique.

STOCKHOLDERS ALL CITIZENS OR NATURALIZED

Stock in the company is sold only to Hungarians, native or naturalized. One of the bylaws of the company provides, however, that no stockholder may seek employment with the company until he has undertaken naturalization as an American citizen. According to Martin Himler, president of the company, no stockholder in the company has yet arrived in America without a firm resolution to become an American citizen as promptly as the laws will permit.

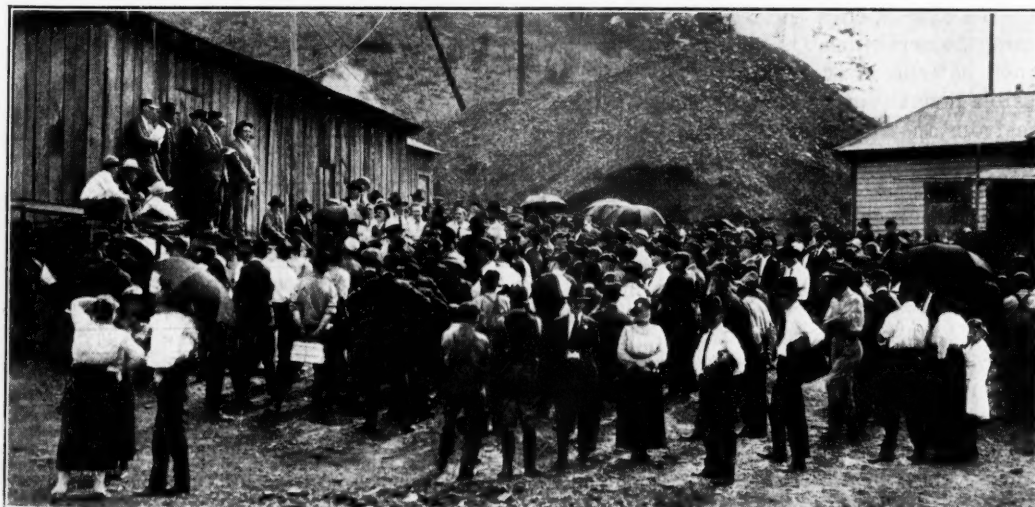
Employment by the company is not limited to stockholders, but the non-stock-holding employees must not exceed one-third the number of stockholding employees. The employment of non-stockholding employees, Himler explains, has been agreed upon by the company to take care of the resident labor.

A portion of the work of the company is devoted to Americanization, and to this end a night school has been established with a competent instructor in which the English language and the theory of American government, with a study of the Constitution of the United States, are taught employees of the company.

Himler's rules of conduct are strict, and in these his hands are upheld by his associates. On a recent tour of the property of the company, two employees were found "shooting craps." The men were promptly discharged and their stock purchased by the company. On a subsequent tour an employee who owned a small store

Stockholders' Meeting

Martin Himler in a miner's cap explaining the \$1,000 insurance policies being distributed among the workmen. Eugen Lang, the secretary, the man on the extreme left in the preceding figure, may be seen in this illustration behind and on the left hand of Mr. Himler, policies in hand. Nearly every other man is a coal miner-stockholder.



on the company's land was found to have in his possession certain jars of contraband whiskey. He was discharged from the employ of the company, required to leave the neighborhood, and his store and home were purchased by the company and resold.

The company declares its plans for the company town will be a model for mining towns in America. The houses will be so constructed as to avoid the appearance of sameness, and hot and cold running water, sanitary plumbing of modern design and electric wiring are being provided for in each. In each deed or contract for a company house the owner or lessor is required to maintain flower and vegetable gardens.

At the annual meeting of stockholders the entire directorate, with one exception, was re-elected to office. The vote is regarded by the directors as an expression of approval and confidence. With the increased capitalization, arrangements for new mine openings and new tipples will be made promptly, the directors say, and the policy of the company in Americanization, education and production of coal at whatever price the market may dictate will be continued.

PLANS MADE FOR SOME ROOMS 60 FT. WIDE

The company mines the Warfield, or No. 2 gas, seam, running from 4½ to 5½ ft., fairly level, with an excellent sandstone roof and fireclay floor. Some difficulty is encountered in keeping the rooms dry. Entering by a 45-deg. slope, lined on floor and walls with concrete, a descent of about 60 ft. is made to the loading point. The cars arrive from the mine workings linked by swivel couplings and hauled by storage-battery locomotives. These latter will be used for main-haulage purposes until the territory opened makes it advisable to use trolley locomotives, when the storage-battery machines will be used for gathering purposes. The coal is dumped on a rotary dump in a hopper, where it is automatically weighed. Thence it falls into a bin 40 ft. deep with a storage capacity of twenty-five tons. Here it is fed to a scraper conveyor which raises it to the tipple, where it screens to 50 per cent lump, 20 per cent nut and egg and 30 per cent slack. Because of the excellence of the roof, the engineers' layouts for future development provide for some rooms 60 ft. wide.

Himler, president of the company, takes a fatherly interest in his men. "If the mine profits, the profit will go to the men," he says. "No employee wastes a penny's worth of material, and none will steal from the company either in money, material or time.

"I think we have found the cure for radicalism, for bolshevism, for Marxism. We have opened the way for the miner to become a mine owner himself, and I am confident that this will soon be true in every industry. I do not see how it is possible now to fail. I cannot see how any benefit can come from an everlasting struggle between labor and capital, nor can I see the necessity for such a fight.

"With our present limited resources the company is now sending two boys to college. One of these was a coal miner until he was eighteen years old. He will be graduated from Columbia University in two years. As our company grows we hope to have fifty boys in college all the time. I believe in my plan. I believe in America; we cannot fail."

IN A RECENT SIGNED ARTICLE in the *Washington Herald*, Representative Florian Lampert, of Wisconsin, advocated government ownership of coal mines.

Plant to Prepare Small-Size Locomotive Fuel and Coal for Domestic Purposes

By C. M. SCHLOSS
Denver, Col.

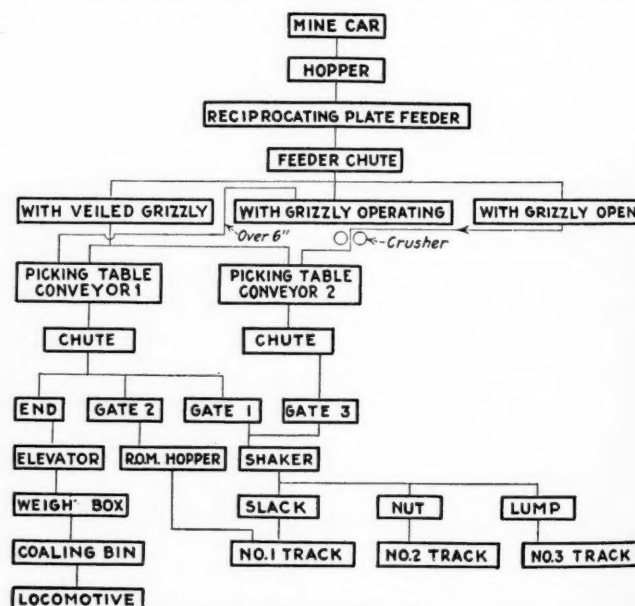
THOSE who visit the tipple of the Merkle Coal Co., at Belt, Mont., almost invariably are impressed with the small size yet great efficiency and adaptability of the screening plant there installed. Versatility is not altogether uncommon in large tipples, but small ones possessing this characteristic are rare. The installation at Belt belongs to this latter class.

When decision was made to make this installation, a tipple salesman, not himself an experienced designer, was called into consultation. To him the president and general manager of the coal company explained what was to be accomplished, insisting that merely a "simple little tipple" was all that was desired.

Design of this "simple little tipple" at first appeared impossible. In due time, however, it was accomplished, and the resulting plant is not as complicated as it looks. As may be seen in the accompanying illustration, pit cars are discharged by a kickback or goose-neck dump into a hopper from which the coal is fed uniformly by a reciprocating plate feeder to a chute containing a grizzly. The bars of this screen are spaced 6 in. apart. The grizzly is hinged so that it may be raised, letting the coal go through unscreened. Hinged veil plates also are provided to cover the grizzly when desired.

From the feeder chute, coal can be discharged to either the far side—No. 2—of a 60-in. double picking-table conveyor or onto both sides. The near side—No. 1—of this picking table discharges into a chute equipped with two flygates in series; one opens to the shaker screen and the other to the run-of-mine hopper; the end of the chute discharges to the elevator mentioned later. The far side—No. 2—of the picking table discharges over a third flygate opening to the screen. The elevator previously mentioned raises the locomotive coal and discharges it into a 3-ton weigh box, which in turn delivers to the coaling bin.

When it is desired to load picked run-of-mine on the



FLOW SHEET OF MERKLE TIPPLE

The Merkle tipple is one of the few bituminous coal tipples that crushes its product, in this case for locomotive use. Note the use of the grizzly or stationary screen, which in this case is used only for the larger coal.

first track, the veil plates in the feeder chute are used covering the grizzly bars. The coal flow in the first case is from dump hopper to feeder chute, to both sides of the picking-cable conveyor, through gates to run-of-mine hopper and thence to cars. If the run-of-mine thus picked is to be screened, the path of the coal is similar except that the gates are opened and the conveyor discharges onto the shaker screen.

Lump coal, as a rule, is salable when the smaller grades are not. To take out the lumps and make locomotive coal of the remainder the veil plates are removed from the grizzly section. The lumps ride over the bars to one side of the conveyor; the smaller sizes fall through to the 26 x 30 in. crusher, are crushed and discharged onto the other side of the conveyor, at the upper end of which the gates are arranged so that the lump falls on the shaker and the small product goes to the elevator and thence to the weigh box.

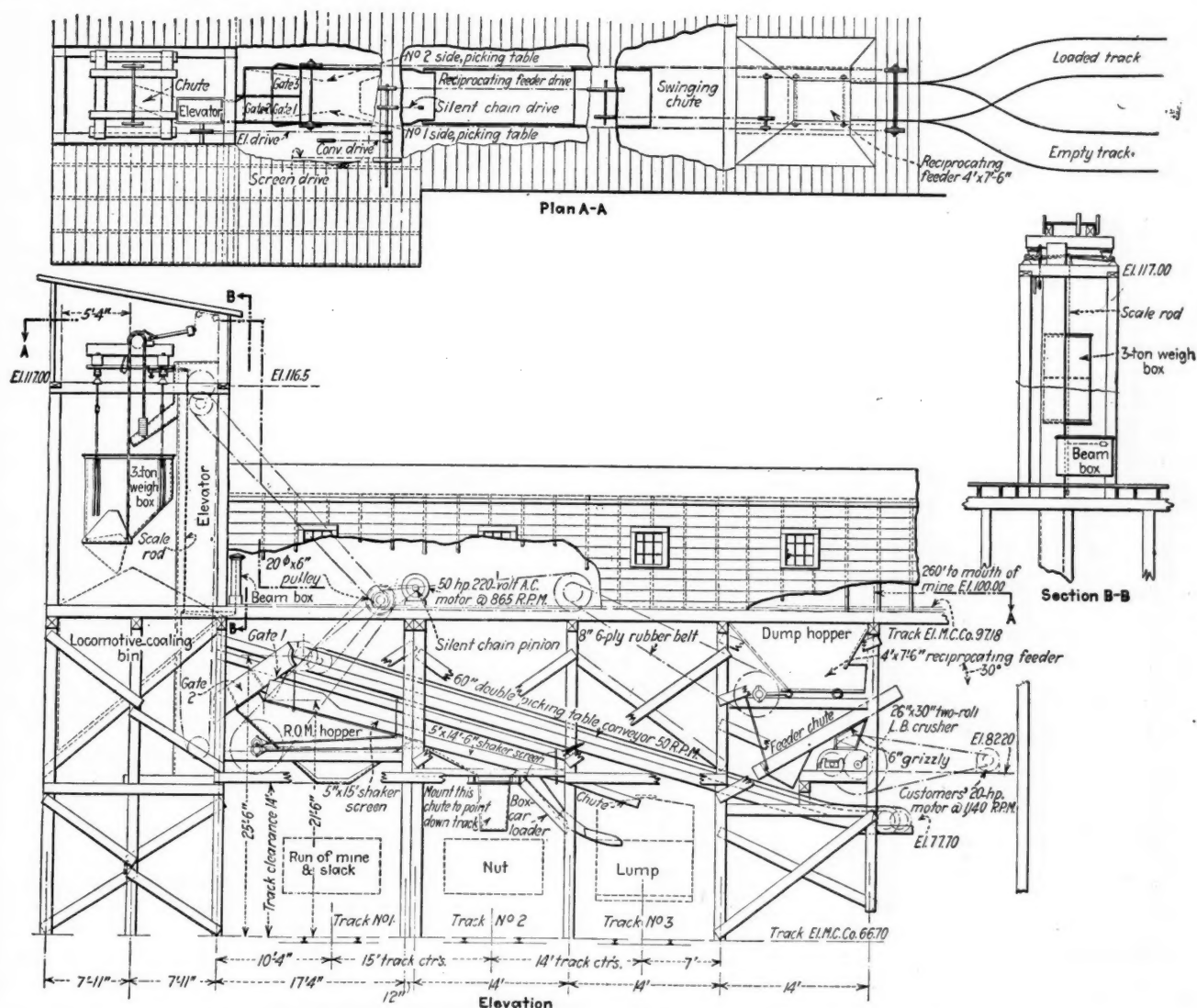
When the demand for locomotive coal is particularly heavy the grizzly section is raised out of the feeder chute. The whole output then passes into the crusher, falls onto the conveyor, and is passed to the elevator.

The crusher is driven by an individual motor. A jackshaft furnishes power for the remainder of the

machinery. This shaft is driven by a silent chain encased within a dust-tight and oil-retaining casing, running at all times in a bath of oil. Clutches are provided so that when all coal is being screened the elevator is not operated. When all coal is delivered to the run-of-mine hopper it will not be necessary to operate the elevator or screens; when all coal is being raised to the coaling bin the screens will not be operated.

This installation was made on an old structure. The narrow track centers and low height made the design difficult, as these could not be changed. Yet this "vest-pocket edition" of a preparation plant is producing clean sized coal efficiently and satisfactorily. The machinery installed was furnished by the Link-Belt Co.

FELL IN A HOLE ON ROAD HOME AND IS COMPENSATED.—Commissioner Jarrett has made an award of \$12 a week to James Snyder, R. D., Dubois, claimant in a compensation case against the Rochester and Pittsburgh Coal and Iron Co., Punxsutawney, for the period from Oct. 30, 1920, to May 15, 1921. Snyder at the time at which he was injured was employed at the defendant's mine at Helvetia, Clearfield County, Pa. He was hurt by falling into an offset when on his way home from work, but while still on the company's premises.



PLAN AND ELEVATION, MERKLE COAL CO. TIPPLE AT BUTTE, MONT.

By flygates and double picking tables all kinds of combinations and separations of product can be worked out. Thus in the feeder chute on the right the coal may be separated on a grizzly, or it may be passed

on without separation over veil plates, or again the grizzly may be raised and the coal dropping through may be passed to a crusher. At the far end there are three gates, two of which lead to a shaker screen.

the other to the run-of-mine hopper, and if all are closed the coal goes to an elevator and presently finds itself in the locomotive-coaling bin. By such deft contriving a little tippie can adapt itself to many needs.

W.G. Duncan Coal Co. Will Exchange Power, Sell Current And Operate on Coal Mined in Bed Below It

Coal from Tipple Is Hauled Through a Seam Underlying Power Plant to Foot of a Small Shaft, Where It Is Hoisted and Discharged to Bunkers—Ashes Are Lowered Through Same Shaft and Taken to Slate Dump

BY ALPHONSE F. BROSKY
Pittsburgh, Pa.

AT GREENVILLE, KY., in the western end of the state, the W. G. Duncan Coal Co. owns a large coal property. This firm is at present working two operations—namely, the Luzerne and Graham mines. Both are developing what is known in that region as the No. 9 seam, and the two have a combined output at present of about 4,000 tons per day. The power station together with the substations now installed are of sufficient size to supply energy for an output which some day will be much larger than that at present produced. The central power station is located at the Graham mine in Muhlenburg County, and is one of the most up-to-date installations of its kind in the country.

The foundations of the buildings and equipment are of concrete, and the power house itself is of red-face brick. The window sashes are of steel and the roof of gypsum with a three-ply waterproof covering. This building was so designed as to save a large amount of excavation and concrete work, which would have been

necessary had the generator- and the boiler-room floors been placed on the same level. Ample space is provided under the turbine room for the condenser apparatus, as well as for a switchroom, storeroom and washroom.

Two turbo-generators are installed at present, one being a 1,000-kw. Westinghouse machine with a Le Blanc jet condenser, and the other a 2,000-kw. General Electric unit with a Wheeler low-level jet condenser. At present the smaller machine is able to handle the load at all times. As the output increases the larger unit will be used during times of peak load and the smaller one will be operated when the station is under lower load and as a spare. By this arrangement the station as now equipped will be able to supply power till the mines are more fully developed. The generated potential is 2,200 volts.

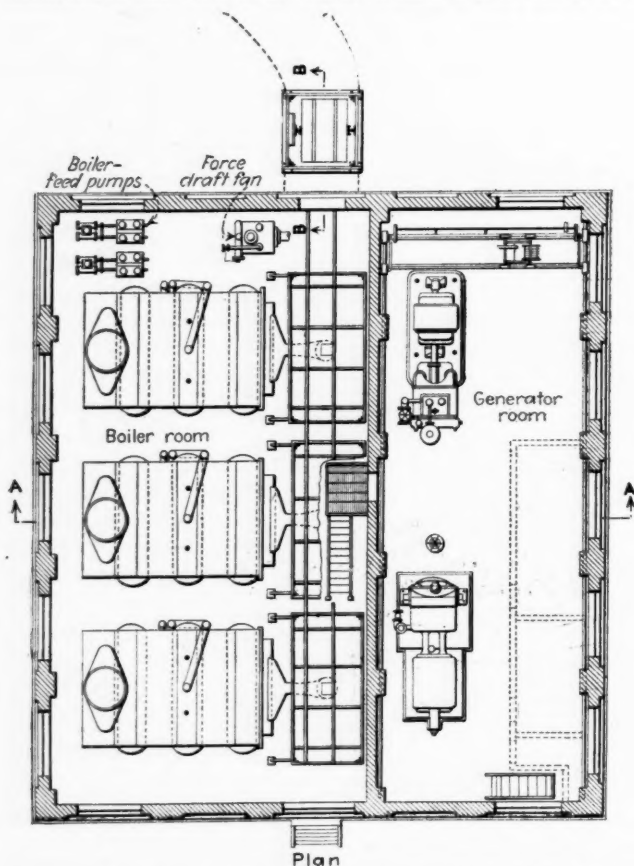
SEVEN-PANEL SWITCHBOARD REGULATES CURRENT

The switchboard is located in the generator room. It was built by the Westinghouse Electric & Manufacturing Co. and is a seven-panel set with black oil finish. It is placed on the same floor level as the generators and directly over the switchroom in which are located the oil circuit breakers, disconnecting switches, lightning arresters and other high-tension equipment. The oil circuit breakers are operated from the switchboard by means of a lever mechanism. An overhead crane installed in the generator room is of ample capacity to handle any component part of the turbines or generators.

BOILER PLANT EMBODIES BEST STANDARDS

In the boiler room three 552-hp. class O No. 22 Stirling boilers are installed. These are equipped with superheaters, Williams automatic feed-water controllers, Williams water columns and Diamond soot cleaners. A Cochran feed-water heater also is employed. The boiler-feed pumps comprise two 10 x 6 x 12 in. Worthington horizontal duplex pressure-pattern units. The water used in both boilers and condensers is obtained from a dam near the station. Owing to the quality of the coal that will be burned in this power plant it was decided to raise the boilers 4 ft. higher than the regular setting. This alteration was made in order to procure greater efficiency, coal having an unusually long flame being used.

Under the boilers Westinghouse six-retort underfeed stoker furnaces are installed. These are so connected as to be driven either by a steam engine or motor, one machine of each kind being provided. The working steam pressure is 180 lb., and approximately 75 deg. of superheat is maintained at the boiler nozzle. Three self-supporting steel stacks have been built, each extending 125 ft. above the damper plate. Forced draft is used, being furnished by a No. 6 Buffalo Forge Co. fan driven either by a small steam turbine or a motor.



PLANT OF W. G. DUNCAN COAL CO., GRAHAM, KY.

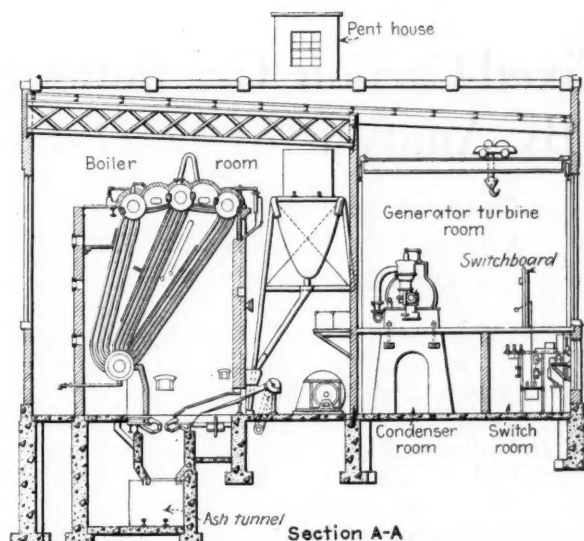
Three 552-hp. boilers on the left receive their coal by the track shown in the center of the building, being elevated from the mine below by the elevator shaft at the top of the illustration. One 1,000-kw. and one 2,000-kw. turbo-generator are installed in the generator room. Dotted lines from the elevator show course of the mine heading leading toward the tipple.

The method employed at this plant for the handling of coal and ashes is unusual. The No. 9 bed of coal lies beneath the station at a depth of 20 ft. and outcrops 150 ft. from the building. The tippie is about one-fourth of a mile from the power station. An entry has been driven from the outcrop to a shaft at the power plant, and a track laid from this shaft to the tippie.

NO. 9 SEAM MAY BE MINED FOR BOILER USE

At present all coal is brought from the tippie to the station through this entry and is raised to the bunker level by a single-drum semi-magnetic control type of elevator manufactured by the Ohio Elevator & Machine Co., of Columbus, Ohio. The hoist is driven by a slipping induction motor. A little later a crusher may be installed, and the No. 9 seam mined for use under the boilers. The ashes are emptied from the furnace hoppers into a car which is lowered by the shaft elevator to the entry and is thence taken out to the pit mouth and the dump.

This central station is being connected in parallel with that of the St. Bernard Mining Co. by means of a



ELEVATION OF GRAHAM POWER PLANT

The coal direct from the mine enters the V-shaped bunker and runs down to the stokers of the Stirling boilers. The boilers are set much higher above the grates than is usual as the coal is long-flaming.

line extending between the two. Excess power will be taken over by the Kentucky Utilities Co. This energy will be used at all mines within reach, as well as for town lighting and in manufacturing plants. Charles M. Means, consulting engineer, of Pittsburgh, Pa., was entrusted with the design and engineering of this power plant.

Many Houses Injured by Mine Caves

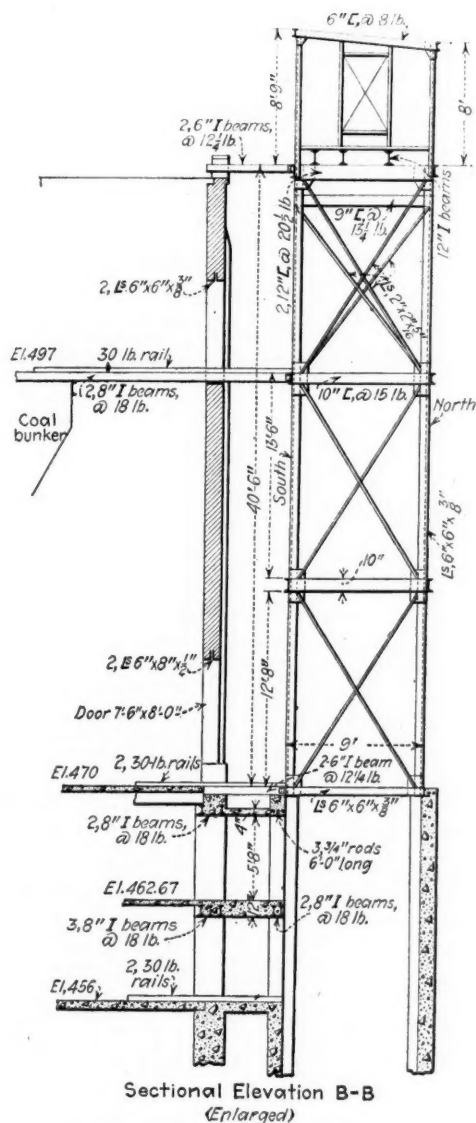
MINE caves are occurring quite frequently in the northern anthracite region. Five properties, four of them in the Sibley section of Old Forge, a town located about half way between Scranton and Wilkes-Barre, and one at Taylor, a village between Old Forge and Scranton, were wrecked on Aug. 8. The first four were over mines of the Pennsylvania Coal Co. The cave is 150 ft. long and extends from the center of the street to the rear of the damaged houses.

The water mains parted and let water into the workings, cutting off the water supply to the houses beyond. The foundations settled in places 6 ft., and the houses will have to be practically rebuilt before they are re-occupied. The residents had been notified and had moved out, so no one was hurt. The Sibley mine in which the cave occurred is a part of the Old Forge Colliery, the mine having been recently taken over by the Pennsylvania Coal Co. It had formerly been controlled by an independent company.

The Taylor property, in Taylor, is over a mine of the same name owned by the Glen Alden Coal Co. The front of the house dropped several feet, and the dwelling tipped forward toward the cave.

Only a few days before this event a cave occurred at Larksville, a suburb of Wilkes-Barre near Edwardsville. This cave, which involved three double dwellings and one single house, occurred over the mine of the Hudson Coal Co. The company has stated that no further disturbance will occur, and the occupants have returned to their dwellings. The company is repairing them and will fill in the depression. The cave was unexpected, being ascribed by the company to a slide in the abandoned Five-Foot bed. Water mains, asphalt roads and sidewalks were damaged, and the street cars suspended operation temporarily.

COMPENSATION RATES ARE LOWERED IN OHIO—The Ohio Board of Awards, which has now been merged into the Department of Industrial Relations of the State of Ohio, under the reorganization plan of the state government, has reduced the basic rate on workmen's compensation insurance for coal operators, beginning July 1 from \$4.25 to \$3.95. This is a reduction of approximately 7 per cent.



HEAD OF ELEVATOR SHAFT

Immediately under the penthouse is the bay from which the coal cars are pushed out over the coal bunker. There are tracks also at the floor level and at the level of the bottom of the ashpit.

Fixed-Carbon Gradients in West Virginia as Indicated By Analysis of Lowest Coals in Any Given Location

Gradient, while Relatively Flat in Northeastern West Virginia, Where the Fixed-Carbon Percentage is Low, Increases Rapidly Toward the Pocahontas Region—Oil and Gas Mostly Found Where Fixed-Carbon Content is at a Minimum

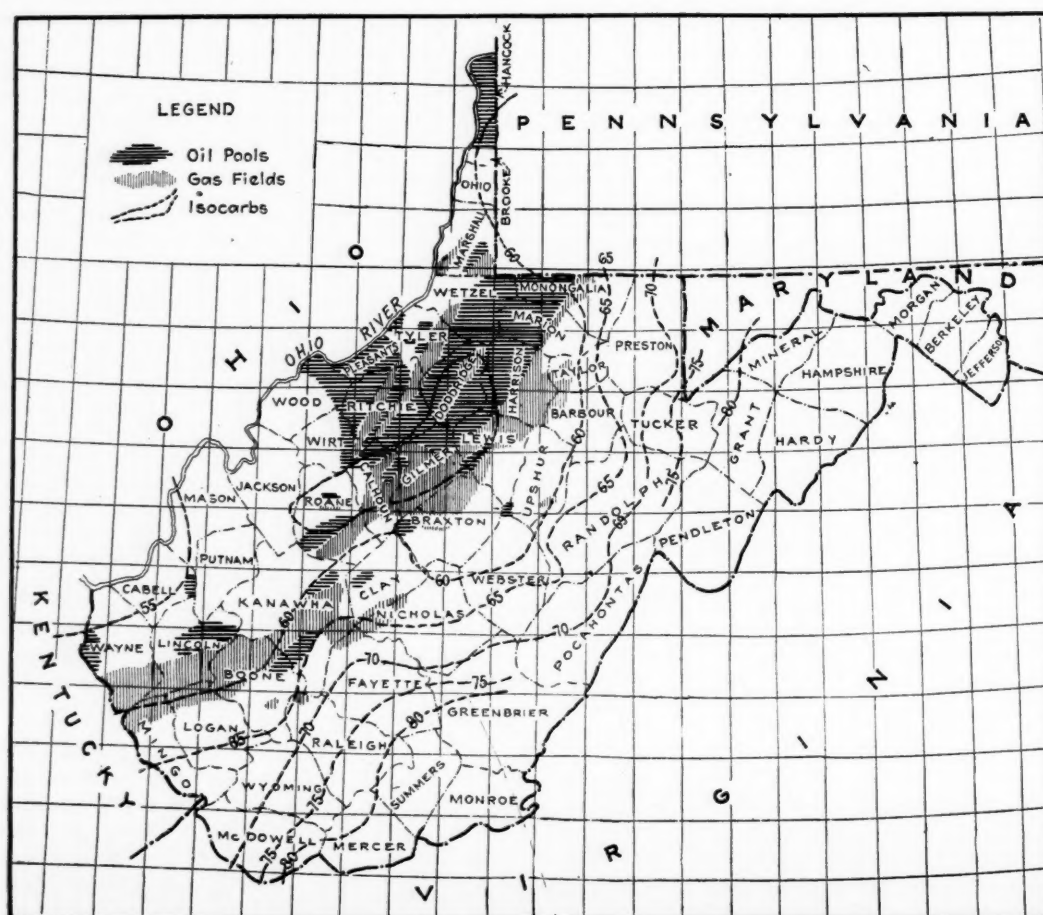
IN A paper by David B. Reger, of Morgantown, W. Va., assistant geologist of the West Virginia Coal Survey, entitled "Carbon Ratios of Coals in West Virginia Oil Fields" and read before the American Institute of Mining and Metallurgical Engineers is contained the accompanying map showing "isocarb" lines. These lines delineate the points at which any one given fixed-carbon percentage on the "pure coal basis" is to be found. Thus, along the line marked 80 the percentage of fixed carbon in the coal is that of the figure named. The term "isocarb" has been suggested by David White. The line might be viewed as an "isovol," its value being based on the volatile constituent per cent of "pure coal substance." It would then be marked 20 instead of 80 and it would, of course, follow the same course.

The term "carbon ratio," as used by Dr. Reger, is applied to the percentage of carbon in pure coal after the water evaporated below 100 deg. C. and the ash have been eliminated. As a comparatively small number of analyses have been made on this basis, it is usually necessary to compute the ratio by dividing the fixed carbon by the sum of the fixed carbon and volatile matter, using the figures of the proximate analysis.

Many thousands of these have been made by the West Virginia Geological Survey, covering every county in which coal is found. Many others have been made by the U. S. Geological Survey and the U. S. Bureau of Mines, but as uniformity of methods of analysis can alone produce comparable results the best plan is to adhere to one set of analyses. For this reason the tests of the West Virginia Survey have been used exclusively.

In preparing the map, it has been necessary to use analyses ranging from the Dunkard (Permo-Carboniferous) coal down to, and including, the Pocahontas Group of the Pottsville (Pennsylvanian) as, with certain exceptions, there is a progressive rise of strata from the Appalachian geosyncline southeastward to the Allegheny Mountains where the coals disappear above the summits.

The Dunkard coals, being much different from those of the Pennsylvanian, have been used only in one county (Tyler). With certain minor exceptions, in each county analyses from the oldest coal seams have been employed, in order to secure the nearest possible approach to underground conditions. In following this rule two or more seams have been used for different portions of counties where the measures pitch more or less heavily.



Isocarbs of West Virginia

Lines figured and broken show where the "pure coal substance" is of any given fixed-carbon percentage. Of course, where, as in the extreme north-east of West Virginia, coal is absent the lines had to be omitted. This is also true in Monroe and parts of Summers and Greenbrier Counties in the extreme south-east of the state. The gas and oil fields are shown because it is found that these earth products are usually if not always associated with high-volatile coal if coal be present. Perhaps the most rapid change in volatile content is found in Greenbrier County.

TABLE OF ANALYSES AND CARBON RATIOS OF CERTAIN WEST VIRGINIA COALS

County	Locality	Coal Seam and Group	Number of Analyses	Volatiles Matter, Average Per Cent	Fixed Carbon, Average Per Cent	F. C. + V. M. Nearest Per Cent
Hancock	.....	L. Kittanning (Ca.)	3	37.91	53.00	58
Brooke	.....	Pittsburgh (Cm.)	15	34.20	56.08	62
Ohio	.....	Pittsburgh (Cm.)	6	35.92	55.17	60
Marshall	.....	Pittsburgh (Cm.)	7	38.40	50.97	57
Wetzel	.....	Uniontown (Cm.)	1	37.07	53.07	59
Tyler	.....	Washington (Cd.)	3	34.27	47.92	58
Pleasants	.....	.....	.....	.....	.....	.....
Wood	.....	.....	.....	.....	.....	.....
Jackson	.....	.....	.....	.....	.....	.....
Mason	.....	Pittsburgh (Cm.)	5	38.79	49.33	56
Cabell	.....	Little Pittsburgh (Cm.)	1	39.82	46.83	54
Wayne	.....	No. 2 Gas (Ck.)	1	40.02	55.42	58
Lincoln	.....	No. 2 Gas (Ck.)	1	39.29	55.81	58
Putnam	.....	Pittsburgh (Cm.)	6	38.53	51.40	57
Roane	.....	Brush Creek (Cm.)	1	37.20	44.12	54
Wirt	.....	Bakerstown (Cm.)	1	33.43	42.75	56
Ritchie	.....	Pittsburgh (Cm.)	1	37.45	52.50	57
Doddridge	.....	Uniontown (Cm.)	3	39.36	45.29	53
Monongalia	East	L. Kittanning (Ca.)	4	30.47	57.53	65
	West	Pittsburgh (Cm.)	8	36.47	54.86	60
Marion	East	L. Kittanning (Ca.)	2	33.90	49.83	59
	West	Pittsburgh (Cm.)	43	36.62	55.73	60
Harrison	East	Harlem (Cm.)	45	35.81	49.70	58
	West	Pittsburgh (Cm.)	56	38.24	53.53	58
Lewis	North	Pittsburgh (Cm.)	2	41.92	51.08	55
	South	L. Kittanning (Ca.)	8	34.52	53.41	60
Gilmer	.....	.....	.....	41.84	49.49	54
Calhoun	.....	Pittsburgh (Cm.)	2	34.99	56.95	61
Clay	.....	Coalburg (Ck.)	6	34.05	56.10	62
Kanawha	Northwest	Pittsburgh (Cm.)	14	40.06	51.48	56
	Southeast	Eagle (Ck.)	7	31.22	63.09	66
Boone	Northwest	No. 5 Block (Ca.)	13	37.31	55.73	59
	Southeast	Eagle (Ck.)	6	34.98	57.55	61
Logan	.....	Campbell Creek (Ck.)	9	34.92	59.27	62
Mingo	.....	Eagle (Ck.)	5	30.45	63.06	67
McDowell	West	Eagle (Ck.)	3	31.29	62.44	66
	East	No. 3 Pocahontas (Cp)	14	17.90	76.13	80
Wyoming	West	Gilbert (Ck.)	4	27.84	63.61	69
	East	Sewell (Cnr.)	5	23.31	72.76	75
Raleigh	West	Eagle (Ck.)	23	29.29	65.02	70
	East	Fire Creek (Cnr.)	5	20.56	77.37	79
Fayette	West	Eagle (Ck.)	16	28.25	66.61	70
	East	Fire Creek (Cnr.)	18	19.29	75.42	79
Nicholas	North	L. Kittanning (Ca.)	17	35.33	53.97	60
	Central	Eagle (Ck.)	24	33.43	59.74	64
	South	Sewell (Cnr.)	29	29.10	65.73	69
Braxton	North	Pittsburgh (Cm.)	7	39.68	51.78	56
	South	L. Kittanning (Ca.)	3	37.02	56.02	60
Upshur	North	Redstone (Cm.)	12	38.36	54.35	58
	South	L. Kittanning (Ca.)	5	35.36	51.78	59
Barbour	Northwest	Pittsburgh (Cm.)	10	36.90	55.63	60
	Southeast	L. Kittanning (Ca.)	18	30.77	56.85	64
Taylor	West	Pittsburgh (Cm.)	10	37.01	55.19	59
	East	L. Kittanning (Ca.)	5	29.90	58.96	66
Preston	West	U. Freeport (Ca.)	43	27.25	62.52	69
	East	L. Kittanning (Ca.)	12	29.49	59.42	66
Tucker	North	U. Freeport (Ca.)	6	22.05	70.20	76
	South	Sewell (Cnr.)	1	24.81	68.18	73
Randolph	Northwest	M. & L. Kittanning (Ca.)	8	32.14	55.63	63
	Southeast	Sewell (Cnr.)	15	30.35	61.80	67
	Central	Sewell (Cnr.)	9	26.59	60.84	69
Webster	North	L. Kittanning (Ca.)	7	32.47	54.08	62
	Central	Eagle (Ck.)	6	35.45	54.04	60
	South	Sewell (Cnr.)	17	30.07	62.08	67
Greenbrier	West	Sewell (Cnr.)	1	26.96	66.77	71
Summers	.....	.....	.....	.....	.....	.....
Mercer	.....	No. 3 Pocahontas (Cp)	17	19.85	66.48	77
Pocahontas	West	Gilbert (Ck.)	1	29.73	56.21	65
Grant	.....	U. Freeport (Ca.)	1	18.46	68.64	78
Mineral	.....	U. Freeport (Ca.)	4	15.50	73.46	82

NOTE.—Group abbreviations are as follows: Cd—Dunkard (Permo-Carboniferous); Cm, Monongahela; Ccm, Conemaugh; Ca, Allegheny; Ck, Kanawha; Cnr, New River and Cp, Pocahontas (last six Pennsylvania). L = lower; M = middle and U = upper.

The table shows in detail the various coals used in preparing the map. Few analyses of coals above the Pittsburgh have been employed.

The purpose of the author is to show that the gas and oil fields are all to be found in those areas where the fixed-carbon percentage is low and where conversely the volatile percentage is high, it being found in general that where the coal is devolatilized the shales are similarly freed of their bituminous content and that the oil and gas have likewise been driven off and lost. For this reason the oil- and gas-producing areas have been placed on the map, and they quite fairly substantiate the theory just enunciated.

As Mr. Reger points out, the main oil pools lie west of the isocarb 60 where the fixed carbon percentage is 60 or lower but, as he states, there are notable exceptions in the Cabin Creek pool of Kanawha and Boone

counties, the southwestern limit of which is not yet fully defined, and in certain pools in eastern Kanawha and Clay counties. There are some other exceptions besides these to which Dr. Reger makes reference.

Irregular as the isocarbs are they show clearly the gradient in fixed-carbon percentage from northwest to southeast, from Ohio toward Virginia, the frontiers of which states with regard to West Virginia are roughly parallel.

Book for Candidates for Mine Inspector

ONE may be permitted to question whether "cram books" of various kinds have any legitimate place in technical literature; whether, indeed, at mining examinations, for instance, men should not be so saturated with the facts of mining as to make it unnecessary for them to plug upon the questions, and those only, that have already been asked and on the answers to them. But whether the practice is approved makes little difference. The books always exist side by side with other books which cover the whole field, and if the operator is looking for a book that will help some poor fellow who has entered himself unsuccessfully year after year for examination to scrape through and some bright fellow to brilliantly surmount all obstacles and pass the examination with flying colors then "Pennsylvania Bituminous Mine Inspector's Examination Questions and Answers," by William G. Duncan, is the book. It is published by the Mine Safety Appliances Co. of Pittsburgh, Pa.

Cursory examination shows it to be quite reliable. The only statement the reviewer has found to question is: "This dust [coal-dust in suspension in the mine air] being acted upon by the flame of the explosion distills carbonic oxide gas (CO), which is itself combustible," and even that may be true. Perhaps some carbon monoxide is distilled, but, as a matter of fact, the amount of carbon monoxide gas distilled is not as important as the amount that is formed by the burning of the carbon, and the progress of the explosion is not dependent on the distillation but on the combustion of the coal particles. A dust explosion is just what its name implies and not an explosion of distilled gas, either carbon monoxide or methane. No reason exists for terming carbon monoxide "carbon monoxide gas," for no solid or liquid carbon monoxide can exist except under immense pressures or extremely low temperatures.

The book contains 200 pages and measures 5 x 8 in. and is bound in cloth. It is well indexed. It answers the questions submitted to candidates for mine inspector by the State of Pennsylvania during the years 1901, 1902, 1905, 1908, 1909, 1913 and 1917.

A SIGNIFICANT DEVELOPMENT of the week ended Sept. 3 was the fact that a slight car shortage developed in western Illinois and northwestern Kentucky. Reports to the National Coal Association simply indicate that there was a shortage at certain points and it is admitted that it may be temporary. Nevertheless significance is attached to the report, because even a temporary car shortage with coal production at its present low point and before the expected heavy movement of lumber and road materials sets in, gives an indication of the possibilities of the situation later in the year.

HENRY FORD ASPIRES to be an uncommon carrier.—*Wall Street Journal*.

Depreciation as a Deduction for Income-Tax Purposes

Allowance Should Represent Actual Deterioration of Property Subject to Wear and Tear — Computation by Equal Installments or by Apportionment of Capital Over Units of Production Urged for Coal Companies

BY FREDERICK SCHWERTNER*

DEPRECIATION is a subject of vital importance to every coal operator in the country. It is a factor which has a direct bearing in the determination of his net income. When high rates of tax prevail, it is important that ample allowances be made for depreciation of coal properties in order to arrive at the correct amount of taxable net income. In view of the fact that the rate of tax on the net income of corporations for the taxable year 1922 probably will be 12½ per cent, as provided in the new revenue bill, the subject becomes more significant. In the past the tendency has been to charge off an insufficient rather than an excessive amount of depreciation. In charging off an insufficient amount, the true net income is not reflected, and this is opposed to sound accounting principles.

Section 214 of the Revenue Act of 1918 allows as a proper deduction "a reasonable allowance for the exhaustion, wear and tear of property used in the trade or business, including a reasonable allowance for obsolescence." The new revenue bill makes no change on this subject.

The deduction for depreciation should represent as accurately as possible the actual deterioration or loss of useful life of such physical properties as are susceptible of wear and tear. In a broad sense depreciation means a decline in value and the amount of the deduction for depreciation should be measured by the decline in value of the depreciable property as a result of the use of such property in the trade or business.

NOTE COST OF IMPROVEMENTS AND ADDITIONS

The capital sum to be returned by the deduction for depreciation is the difference between the cost of the depreciable property (or the March 1, 1913, value if acquired prior to this date) and the salvage value. There should be added to this sum the cost of improvements, additions and betterments, the cost of which is not deducted as an expense, and from this sum there should be deducted the amount of any definite loss or damage sustained by the property through casualty. In case capital assets are sold during the taxable year, the cost of the property should also be deducted.

The cost of incidental repairs, which merely keep the property in operating condition, should be charged to expense and deducted from gross income. As bearing on this subject, special attention should be called to Article 222 of Regulations 45 (revised Jan. 28, 1921), which reads as follows:

Art. 222. Allowable capital additions in case of mines.— (a) All expenditures for development, rent, and royalty in excess of receipts from minerals sold, shall be charged to capital account recoverable through depletion while the mine is in the development stage. Thereafter any development which adds value to the mineral deposit beyond the current year shall be carried as a deferred charge and apportioned and deducted as operating expense in the years to which it is applicable.

(b) All expenditures for plant and equipment shall be

charged to capital account recoverable through depreciation while the mine is in the development stage. Thereafter the cost of major items of plant and equipment shall be capitalized but the cost of minor items of equipment and plant necessary to maintain the normal output, and the cost of replacement may be charged to current expenses of operation.

The main object of charging off depreciation is not to provide a fund out of which to make repairs but to provide for the replacement of the depreciated property after its usefulness has ended.

The capital sum to be returned by the deduction for depreciation may be charged off over the useful life of the property either in equal annual installments or in accordance with any other recognized trade practice, such as an apportionment of the capital sum over units of production. The law does not prescribe rates of depreciation, because these depend upon the kind and class of property and upon the conditions under which the property is used, but merely provides that the allowance shall be "reasonable."

There are several methods of computing the amount of depreciation, but the methods most adaptable for coal properties are (1) by equal installments and (2) by apportionment of the capital sum over units of production.

Under the equal-installment method the capital sum to be returned is divided by the estimated life of the depreciable property, and the result is the annual depreciation to be deducted. The rate of depreciation under the installment method is, of course, affected by the life of the coal mine, as the deposit may become exhausted before the expiration of the normal life of

DEPRECIATION RATES ON COAL-MINE EQUIPMENT EXPRESSED IN YEARS OF LIFE

Equipment	Geographic Divisions					
	a	b	c	d	e	f
Beehive ovens.....	10	10	10	10	10	10
Byproduct ovens.....	12	15	15	15	15	15
Cables and haulage.....	2	2	2	2	2	2
Electric equipment.....	7	10	7	5	10	7
Furniture and fixtures.....	10	10	10	10	10	10
Hand tools.....	1	1	1	1	1	1
Headframe.....	Life of Property					
Houses { Brick.....	Life of property					
{ Concrete.....						
{ Frame.....						
Locomotives.....	10	10	10	10	10	10
Mine cars.....	4	4	4	4	4	4
Mining machines.....	7	8	7	5	8	8
Motors.....	10	10	10	10	10	10
Mules and horses.....	4	4	4	4	4	4
Power plant.....	7	7	7	7	7	7
Pumps.....	5	10	7	5	7	7
Rails.....	5	10	8	5	10	10
Timbers.....	Life of property					
Tipple { Frame.....	Life of property					
{ Steel.....						
Washeries.....	Life of property					
Wires and trolleys.....	7	10	7	5	10	7

a Anthracite. b Pennsylvania bituminous, West Virginia, Illinois. c Kentucky, Tennessee, Georgia, Ohio, Indiana. d Missouri, Kansas, Iowa, Arkansas, Oklahoma, Alabama. e Texas, North Dakota, South Dakota. f Wyoming, Montana, Colorado, New Mexico, Utah and Washington.

*Of the Washington (D. C.) Bar.

the buildings, machinery, etc. Under such circumstances the rate of depreciation should be measured in such a way as will bring the property to its true salvage value when no longer useful for the purpose for which such property was acquired.

The preceding table of depreciation shows rates applicable to coal equipment in various parts of the United States. These rates are regarded by the Bureau of Internal Revenue as satisfactory. They are neither maximum nor minimum rates, and the rate of depreciation will necessarily depend upon the circumstances and conditions of each particular case.

The allowance for depreciation should be computed and charged off with express reference to specific items, units or groups of property, each item or unit being considered separately or specifically included in a group with others to which the same factors apply. While it is not essential, it is deemed advisable to keep a separate reserve account for each class of assets, such as Reserve for Depreciation of Power Plant, Reserve for Depreciation of Buildings, Reserve for Depreciation of Mine Cars, etc.

If it develop that the useful life of the property has

been underestimated, the rate of depreciation should be adjusted, and the balance of the cost of the depreciable property, or its fair market value as of March 1, 1913, should be spread over the estimated remaining life of the property. This principle applies equally in the case where the useful life of the property has been overestimated.

Under the unit-of-production method the amount of the deduction for depreciation depends upon the tonnage extracted during the taxable year. It is first necessary to determine the aggregate recoverable tonnage at the beginning of the taxable year. The capital sum to be returned should be divided by the aggregate recoverable tonnage at the beginning of the taxable year. The quotient is the unit of depreciation per ton. This figure should be multiplied by the number of tons of coal extracted during the taxable year. This method is simple and is very advantageous under certain circumstances.

It is important that the amount of depreciation deducted for any taxable year should be charged off on the books of the company in order to constitute a deduction.

P. C. Madeira Compiles Economic Facts About Anthracite for Consumers

FACTS concerning anthracite, probably little known among consumers of anthracite, from a statement compiled by Percy C. Madeira, president, Anthracite Coal Operators' Association, are as follows:

Highest royalties in the anthracite field are paid to the Estate of Stephen Girard (City of Philadelphia, trustee), the average being above \$1.10 a ton. One operation pays \$2.40 a ton on stove and chestnut coal. Average royalty of Girard Estate in 1914 was about 42c. a ton.

Cost of mining coal varies at different collieries. At some it costs twice as much as at others. The output of all the mines is needed every year. The number of high-cost mines must increase as the deeper and thinner seams are worked.

More than 85 per cent of the total production of bituminous coal is shipped to the market in the condition in which it leaves the mine. All anthracite must go through a manufacturing process in a costly breaker, which produces nine sizes simultaneously, and in about the same proportion every year.

There is no difference in the cost of mining the large sizes of coal and the small sizes, but the small (steam) sizes must be sold at a loss in competition with bituminous coal. Some collieries produce as much as 60 per cent steam coal, against only 40 per cent domestic sizes.

For every ton of coal marketed in the anthracite industry about eighteen tons of water are hoisted and one-quarter of a ton of air must be pumped into the mine. For every ton of anthracite produced, 11 oz. of explosives and about seven board feet of lumber are used. In many mines, for every ton of coal hoisted, one-half ton of rock and other refuse is hoisted.

Pumps in anthracite mines have a hoisting capacity of 823,641,120 gallons of water every twenty-four hours. This is equal to the water consumption of Philadelphia every two and one-half days. It is enough water to fill the tank of every locomotive in the United States twice a day.

One careful estimate of the excavation in anthracite mines every year in new workings is 195 miles of timbered gangways and tunnels. This is equivalent to a subway from Philadelphia to New York and back. Every three years the anthracite miners remove more material than the United States Government handled in ten years at the Panama Canal.

In bituminous mines four-fifths of the employees are em-

ployed underground, most of them directly engaged in getting out coal. In the anthracite mines there are 110,000 employees engaged in preparing and handling coal, against 42,000 actually mining coal.

The cost of labor in producing anthracite is about 70 per cent of the total mining cost. The cost of supplies used per ton produced is about 80c. The total supply bill of the anthracite mines runs about \$60,000,000 a year.

The U. S. Government found that in 1918 there was about \$8 invested in the anthracite industry for every ton of coal produced. The interest on this investment at 6 per cent would be about 48c. a ton. A U. S. Senate committee report shows in testimony presented that the "margin" per ton of anthracite from April, 1920, to October, 1920, was 48.1c. per ton. Out of this margin—not profit—must come Federal taxes, cost of improvements, interest on borrowed money, selling expenses, and reserves for non-insurable risks, before the net profit available for dividends can be determined.

UNION MEN WILL NOT WORK WITHOUT CHARTER.—New miners at mine No. 3 of the Queen Coal Co., at Jasonville, Ind., where a faction of the old employees is objecting to the employment of men from outside the community, reported for work recently, but decided after a short conference to wait until their new local charter had been received from the international headquarters of the United Mine Workers at Indianapolis. It is expected soon. It is said that this is not an indication of dissatisfaction among the men. They are merely trying to avert the criticism that without a charter they could not be union men.

RECORD PRICE FOR INDIANA COUNTY (PENNSYLVANIA) COAL.—A two-thirds interest in the coal under the Harvey Boyer farm in Indiana County, Pennsylvania, near the village of Elderton, was sold recently to Benjamin Clark for \$21,000. As there are 211 acres the rate paid is about \$148 for the whole interest. The other third interest is held by the Cowanshannock Coal & Coke Co. The price is regarded as unusually high for that vicinity. Coal in the neighborhood was bought from the farmers at \$60 per acre.

ILLINOIS MINE WORKERS have purchased a fine six-story building in the center of the city of Springfield, which will be used as their union headquarters. The purchase price is announced as \$275,000.



Problems of Operating Men

Edited by
James T. Beard



Breakage of Coal in Mines

Run-of-Mine Coal Agreement a Wasteful Measure.
Caused Operators Expense to Change Tipples.
No Incentive to Miners to Produce Large Coal

BREAKAGE of coal in the mine is an important item in economical production. I was pleased to see attention drawn to this matter in the editorial, *Coal Age*, July 21, p. 86. It has a bearing on the good of the coal industry that is far reaching and I hope its discussion will benefit us all.

It is now about eight years since the fight was on between the coal miner's organization and the operators, regarding the price paid the miners for coal sent out of the mine. As we all know, the result was that an agreement was entered into to pay one price, for "run-of-mine coal."

PRACTICAL EFFECT OF RUN-OF-MINE AGREEMENT ON THE MINER

Under this agreement it soon appeared that the miner was not interested in producing large coal. Less attention was given to the mining of shots and more powder was used to blow down the coal. It made little difference to the miner if the coal was shattered into fragments. Indeed, the smaller sizes were loaded more readily into the mine cars.

No argument is needed to show that this agreement was far from being an economical one. Not only did it put the operators to large expense to rearrange their tipples in accordance with the new basis of payment, but a large amount of coal was ground to powder and lost or rendered unmarketable at a suitable price.

EFFECT IN THE MINE

In the mine, the effect was to produce much fine dust on the roads and at the working faces. To the honest miner, the agreement was an injustice. In my own case, I estimated that my earnings were cut down \$1 or \$1.50 a day, by reason of the run-of-mine agreement, under which the miner was now to be paid. The man who wanted to mine and load good coal found it hard to maintain his earning capacity unless he laid aside his pick and used more powder.

It was seldom that a miner produced more large coal than was necessary to build up his car, and even these large pieces would scarcely hold together while being carried from the face to the tipple. The fine coal was all loaded in the body of the car and the larger pieces used for "topping."

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Now, I am wondering what will be the next fight. To my mind, it will be on a demand that cars be only "bed-loaded." We have had a little of this already. There would then be scarcely any large coal produced and the operators would have on their hands a low-priced or unmarketable product.

NEED OF GREATER ECONOMY

The present industrial depression should teach us very much. It should impress on our minds the importance of adopting the most efficient and economical methods and agreements regarding the production and marketing of coal. Every agreement should consider, on an equal basis, the miner as the producer, the public as the consumer and the operator who is the "go-between" in the handling and marketing of the coal.

One important factor in agreements between the miners and the operators is the size of territory or the zone covered by the agreement. In most cases, the proper zoning is a difficult problem in an agreement. The zones are generally too large. It were better if they covered less area and the agreements adapted to the particular conditions in the areas covered.

INDIVIDUAL AGREEMENTS

There are mines, where the environment is such as to warrant an individual agreement covering that mine only. In other words, the operator of a mine should be able to make such an agreement with his miners as will satisfy them and make it possible for him to produce coal at a cost that will enable him to enter the market in competition with other mines more favorably located.

In the editorial I have mentioned, there are a number of things named that would help to reduce the breakage and loss of coal in the mine. There is nothing of greater importance, in this respect, than the adoption of the long-wall, panel method of mining to which attention has been called in numerous instances in *Coal Age*. Development work should be kept ahead by the use of improved coal-cutting machinery.

In this connection, let me say, that I visited a mine recently where 36 miners were employed, 8 of whom were entrymen, making the ratio of entry driv-

ers to miners working in rooms, 1:3½. This was necessary, in that case, in order to keep the development work ahead of the miners. It shows, however, the need of more improved methods and machinery for that purpose.

Linton, Ind.

W. H. LUXTON.

Experience vs. Safety

Experience in mining coal a factor in mine safety. New men required by law to work under supervision of an experienced miner.

WITH much surprise, I read the letter of R. W. Lightburn, *Coal Age*, July 21, p. 101, in which he favors the employment of unskilled men in mines, claiming that they are more subject to discipline, obey orders better and are therefore safer than the average experienced miner.

For the safety of mining operations, I hope there are not many who endorse these statements of Mr. Lightburn. It is quite true that a miner who will not attend at once to a dangerous condition he knows to exist is not only endangering his own life but is a menace to his fellow workmen. On this point we can all agree; but it does not follow that an experienced miner will be unmindful of or disregard such dangerous condition existing in his place.

EXPERIENCE ALWAYS THE MINER'S CHIEF SAFEGUARD

Surely, in this twentieth century, no one in a serious mind will disparage or discredit experience in a mine worker, or claim that it makes the man less careful in the performance of his work. The man who has learned by experience how to detect a dangerous condition of roof, does not have to rely on the judgment of others to tell him when he is in danger. His experience tells him that.

Now, it is not always possible for the mine foreman or one of his assistants to be around where men are working under dangerous conditions. For this reason, the mining law in many states requires that new men employed in the mines work under the watchcare of an experienced miner, who is made responsible for their safety.

In one instance that I observed, a single experienced miner had charge of several places, firing all the shots and being responsible for the safety of the men working therein. It was his duty to see that each place was properly timbered and that the men worked under safe conditions.

My opinion is that it is not the experienced man who is most frequently

caught and injured or killed in a mine, as is so often claimed. Of course, nobody will attempt to claim that the experienced miner is immune from accident. The facts would not support such a claim. My contention is, however, that experience teaches a man lessons he does not forget; and he is a safer workman than the man who has yet to learn those lessons.

MAKE EACH MINER RESPONSIBLE FOR HIS OWN SAFETY

Speaking of avoiding danger, the most important thing is to adopt safe rules and follow them. In the matter of timbering, one good rule is to practice systematic timbering at the working face, setting the posts in rows, at a specified distance apart. The manner of standing the posts and the distance apart should be agreed on between the superintendent and the mine foreman.

When such a system is adopted woe betide the miner who fails to post his place as required. Each miner should be made responsible for his work and keeping his place safe. He should be taught not to depend on another, but to look after his own safety.

Making every miner responsible for his own safety does not, however, relieve the mine officials of their duties in that matter. Every man employed in the mine is in charge of the mine foreman and his assistants. Failure on the part of an official to look after the safety of his men, or failure on the part of miners to regard their own safety are alike liable to prosecution. In the interest of safety, any such failure should be promptly reported to the district mine inspector, whose duty it would be to see that proper measures are taken to punish the aggressor and insure future safety.

ANDREW O. BAIN.

McKeesport, Pa.

Superintendent vs. Foreman

Proper organization gives no opportunity for conflict between a superintendent and his foreman. A wise superintendent, lacking practical underground experience, will depend on the judgment and experience of his foreman.

READERS of the columns in *Coal Age*, under the title "Problems of Operating Men," have undoubtedly noticed that many complaints are being registered by mine foremen, regarding the lack of experience on the part of numerous superintendents whose instructions they are supposed to follow. While it is quite likely that many of these complaints are unfounded, it is nevertheless true that the position of mine superintendent is often filled through favoritism.

One cannot but sympathize with a competent and conscientious foreman who is compelled to take orders from a superior in office who is not qualified by either education or experience to realize the dangers incident to underground operation, and who is too willing to take chances while he himself is safe on the surface.

There are many such men now in charge of important mining operations. It goes without saying that they should depend on and act according to the advice of their more experienced foremen. In most cases, I regret to say, this is not done and the average foreman is not given a free hand in the operation of the mine.

Too often it happens that a green superintendent will go about the mine, giving orders to the workmen without first consulting the foreman, much to the disgust and annoyance of the latter. Such a practice on the part of a superintendent destroys the discipline of the mine, as it detracts from the authority of the foreman and gives rise to trouble.

SUPERINTENDENT'S RIGHTFUL AUTHORITY IN THE MINE

One effect of this practice on the part of the superintendent is that the workmen quickly form the habit of going directly to him with their complaints, instead of taking them to the foreman. The superintendent listens to the complaint and promises to take the matter up with the foreman at the first opportunity. It is clear that no real harmony can exist between the superintendent and the foreman when this is done.

Where an operation is well organized, there is plenty of work for both the superintendent and the foreman, without either interfering with the duties of the other. Naturally, the superintendent is the one in authority over the entire operation. If he is wise his position will enable him to exert a powerful influence for good.

On the other hand, if he is indiscreet, domineering and meddlesome, his influence will create discord, as his personality and conduct will, to a large extent, influence every man in the organization. The habits and appearance of the superintendent will be reflected in the general appearance of the camp and about the work.

The mine superintendent, by reason of his position, exerts a great influence over the camp life and places his stamp on both the social and religious activities, which go so far to make the miner's life enjoyable. To be successful, he must be absolutely honest and fair in all his dealings, both with the company and his men, showing no favoritism but giving every man a fair and square deal.

SUPERINTENDENT IN CONSULTATION WITH HIS FOREMAN

While the superintendent must plan and decide the general layout of the mine, if there is no regular engineering department to take charge of that work, he should do this in consultation with the mine foreman. The superintendent should make frequent visits to every working place in the mine and be familiar with all details of haulage, ventilation and drainage, which will enable him to discuss intelligently the many problems that confront the foreman.

To sum up briefly, there should be complete harmony between these two

officials, if each is to have confidence in the other and order and discipline are to prevail. Where the superintendent shows a keen interest in the health, happiness and welfare of all the employees it will have its effect to make them loyal and industrious.

Many have the idea that the work of a mine superintendent is not difficult; but let me say, speaking from an experience of fifteen years, if a superintendent's duties are rightly performed he has a man's job and one requiring patience, energy and tact if the operations in his charge are to be brought to a high degree of efficiency. For that reason, operating companies should use extraordinary care in the selection of men for the important position of mine superintendent.

W. A. G.

Indiana, Pa.

ANOTHER LETTER

NUMEROUS opinions have been given, by different writers, in discussing the question of the superintendent of a mine and his relation to the mine foreman. I would like to offer a few comments along the same line.

In the first place, let me say that before a man can be thought capable of supervising the operations of a mine as superintendent, he must be well fitted for the task. While he must be thoroughly familiar with the practical side of mining, it is equally important that he understand thoroughly the theory and principles of mining.

In my opinion, a mine superintendent should have passed an examination at least as thorough and difficult as that required of the mine foreman under him. Like the foreman, he should be required to have had a number of years' practical experience underground before being permitted to assume the duties of the office of mine superintendent.

MINING SUCCESS DEPENDS ON CO-OPERATION

The first thing a wise superintendent will do when taking charge of a mine is to get in touch with the several branches of the work and the men in charge of the same, all of whom come under his direct supervision. In doing this he must seek to gain their hearty co-operation, on which the success of the undertaking depends.

The old saying has it that "A house divided against itself will fall," and in nothing is this more true than in the management of a coal mine. There must be harmony and unity of purpose and action on the part of all concerned; and the superintendent is the man in a better position to bring this about than any other person.

When a mine superintendent has caused his foreman and others to feel that he is ready at all times to listen to their suggestions and confer with them regarding any needed improvements or change of methods, he has taken a long step toward establishing good feeling among his men, and causing them to have a high regard for himself.

A superintendent must be an active man, never asking others to do what he would not care to do himself. He must keep his promises; his word to his men must be as good as his bond. Many fail in this respect and have lost the confidence of their men.

This reminds me of an incident that illustrates the difference between a superintendent who has the confidence of his men and another who has lost that regard. The superintendent of a certain mine had been laid by for a considerable time, owing to an accident that had befallen him. In the meantime, a man had been appointed in his place, as acting superintendent.

On recovery from his accident, this superintendent accompanied by the operator walked down to the mine. Arriving at the shaft, they found the acting superintendent in an altercation with one of the miners, who flatly refused to return to his work until he was paid what had been promised him.

CONFIDENCE IN A SUPERINTENDENT SENDS MINER BACK TO WORK

Recognizing the man as one who had long worked in the mine, the old superintendent called to him and asked him what was the matter. In reply to the miner's complaint, the superintendent said, "Ed, you go to work and I will look at your place as soon as I can get around; but that may be a week." Without a moment's hesitation, the miner said, "I will go in in the morning and go to work."

By past experience, the old miner knew that the superintendent would be as good as his word. He no longer refused to go to work, but was willing on a mere promise to again take up his tools in his place. The operator then went to the acting superintendent and told him how much he deprecated the treatment extended to the man, stating further that he hoped it would be a lesson to him in the future.

McKeesport, Pa. INSPECTOR.

THIRD LETTER

FOR some time past, I have been reading the various letters regarding superintendents, many of whom, it is claimed, do not possess the necessary ability and practical knowledge of mining to fill such a position. Unfortunately, these men have not been required to pass an examination like mine foremen and other officials.

In my judgment, our lawmakers are largely responsible for this lack of capability in mine superintendents. We do not have to go outside of Pennsylvania to find more than one "Silly Willie" or "Hill Billie," holding a position as superintendent of a mine. It is needless to say that these men have neither certificates, experience nor judgment that would enable them to successfully operate a coal mine, and yet they are supposed to supervise the mine foreman and instruct him regarding the work.

Since the change was made in the bituminous mine law of this state, it must be admitted that there are many

mine foremen now in charge of mines who hold no certificates and are little better, if any, than the class of superintendents I have just described. It is sad to think that thousands of lives are daily in charge of such men.

Replying to the question of why such and such a foreman has not taken the examination and gotten a certificate, the answer usually given is, "Oh, the certificate won't make me any better. I could pass if I took the examination, but have been too busy to go before the board." Another will claim that he "was sick at the time." Perhaps, he will go next year.

These answers do not inspire any one with an idea that the man is capable. Take my word for it, the man is a fit subject to play a bass horn in a band, but not to take charge of a mine. As a fact, he is hiding behind that provision in the law that makes the judgment of the operator equal to that of an examining board.

No one doubts but that the operator who hires such a superintendent or foreman pays the price in the end. However, the worst of it all is the trouble that comes to the man who succeeds such a one in office. I speak from

experience, having taken charge of a mine formerly presided over by an uncertified foreman.

My conclusion is that the man without a certificate holds a job down just as long as he can satisfy his employer with his gift of gab, or, in other words, can hoodwink him to believe that he is capable. When he leaves, it will be up to some man to try to make a mine out of a chopped up gobhole.

In my opinion, every mine official in charge of underground work should hold a certificate showing that he is qualified. The result would be fewer accidents, more complete extraction of the coal at a lower cost of production, better discipline in the mine, fewer prosecutions and a higher esteem for the work of the state examining board.

Let us continue to hope that the time is close at hand when the law that places the judgment of one individual—a coal operator—on a par with a competent examining board, will be wiped from the statute books. To this end, mine officials must pull together. If either the superintendent or the mine foreman is incapable the only thing to do is change or quit.

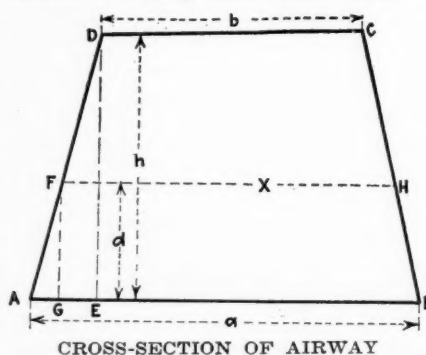
Mayport, Pa. JAMES THOMPSON.

Inquiries Of General Interest

Depth of Water in Airway

Ingenious Solution of the Problem to Find the Depth of Water in an Airway Having a Trapezoidal Cross-section, the Airway Being Half-full

KINDLY permit me to present a third solution to the problem of finding the depth of water in an airway whose cross-section is in the form of a trapezoid and the airway half-filled with the water. The two previous solutions of this problem were given in



CROSS-SECTION OF AIRWAY

Coal Age, April 15, p. 676, and June 23, p. 1125. My solution is as follows:

Denote the bottom and top widths of the airway by a and b , respectively, and the width at the surface of the water by x ; and call the height of the airway h and the depth of the water d . Then,

$$x = \sqrt{\frac{a^2 + b^2}{2}} = \sqrt{\frac{9^2 + 6^2}{2}} = 7.648 + f.$$

The depth of the water is then found by substituting this value of x in the following equation

$$d = \frac{h(a-x)}{a-b} = \frac{6(9-7.648)}{9-6} = 2.704 \text{ ft.}$$

I would like to ask if this solution is correct. A. D.

Knoxville, Ia.

The solution offered by this correspondent is both correct and ingenious. Its simplicity recommends its use in preference to either of the two solutions given previously. The correspondent should, however, have shown the development of the formulas he has used, which is as follows:

Referring to the accompanying figure, let $ABCD$ be the trapezoid in question, the surface of the water when this section is half-filled being indicated by the line FH .

Now, draw the lines DE and FG perpendicular to AB , forming two similar triangles AGF and AED . It is evident that AG is equal to $\frac{1}{2}(a-x)$; and $AE = \frac{1}{2}(a-b)$. Also, $FG = d$ and $DE = h$.

Substituting these values, we have, from the similar triangles mentioned,

$$h : d :: a - b : a - x$$

Hence, $h = \frac{a-b}{a-x} d$ 1.

Again, since the water half-fills the section, the area $ABCD$ is twice the area $ABHF$, and we have

$$h\left(\frac{a+b}{2}\right) = 2d\left(\frac{a+x}{2}\right) = d(a+x) \quad 2.$$

Now, substituting for h its value in Equation 1, simplifying and remembering that the product of the sum and difference of two factors is equal to the

difference of their squares, we have, finally,

$$a^2 - b^2 = 2(a^2 - x^2)$$

and

$$x = \sqrt{\frac{a^2 + b^2}{2}} \quad 3.$$

Again, from Equation 1, we have for the depth of the water in the airway

$$d = \frac{a-x}{a-b} h \quad 4.$$

It will be observed that Equations 3 and 4 are the ones used by the correspondent in the foregoing solution.

discharge of this pump is $0.85 \times 2.618 \times 7.48 = 16.64$ gal. per min. Therefore, the time required for this pump to empty the sump is $14,960 \div 16.64 =$ say 900 min., or 15 hr.

QUESTION—(a) What precaution would you take as a mine foreman, in mines where electric power is used, to protect the employees from accident? (b) What voltage is the safest, 250 or 500 volt?

ANSWER—(a) Assuming that the electrical installations have been made by a competent electrical engineer who is fully acquainted with mining conditions, and that the wires have been properly hung and safeguarded in accordance with the mining laws and so as to afford the needed protection of workmen against contact with live wires where it is necessary for men and animals to pass under or near the wires, it is the duty of a mine foreman to see that proper danger signals are used and notices posted at all points where danger exists in the mine, and to see that workmen are forbidden to tamper with the wires or employ any unsafe practices in connection with the operation of electrical machines, such as coal cutters, drills, pumps, fans and other machinery. Any violations of these rules should be promptly and suitably punished.

(b) It is often claimed that fewer accidents occur in the use of a 500-volt circuit than where 250 volts are employed, it being argued that men are more careful to avoid contact with a wire charged with the higher voltage. It cannot be denied, however, that a 500-volt circuit is more fatal to life when contact is made with a live wire than a 250-volt circuit, which is therefore generally safer for use in mines. Where it is necessary to employ a high potential for transmission of the current long distances in mines, the conductor should be either carried on the surface to a point directly over where the power is to be used in the mine, or the wires should be hung in the air-course and kept off from roads and travelingways.

QUESTION—What precautions would you take in approaching old and abandoned workings?

ANSWER—Old abandoned workings are liable to be filled with gas or water and become dangerous if an entry or room should break into the old works, or the water or gas be tapped with a drill. No reliance should be placed on the supposed accuracy of maps and surveys, which may prove inaccurate. When approaching old workings, a single entry not exceeding 8 or 10 ft. in width should be driven. A drillhole should be kept five or six yards in advance of the face of the heading and flank holes should be drilled at regular short intervals in each rib, making an angle of about 45 deg. with the heading. Only safety lamps should be used by the men driving the heading. A sharp watch should be kept for the first appearance of gas or water seeping through the strata, and small wooden plugs should be ready for instant use in case a drill hole tapped water or gas.

Examination Questions Answered

Examination, Mine Foremen and Firebosses, Lexington, Ky., May 30, 1921

(Selected Questions)

QUESTION—What are the causes of blownout shots and what effect does such a shot have in a dusty mine?

ANSWER—Several things may cause a shot to blow its tamping, which occurs whenever the line of least resistance corresponds to the axis of the hole. In that case the shothole has not been properly located so as to give the powder an opportunity to perform its work in breaking down the coal. If too quick a powder is used or the hole is overcharged the same result may happen. The latter condition, however, is more apt to cause what is known as a "windy shot." The same effect is produced when a shot seams out through a soft stratum of the coal. In either case, much of the force of the blast is expended on the mine air instead of being absorbed in the breaking down of the coal. If the diameter of a shothole is too large, it may result in too great a concentration of the charge. In that case, if the hole is not deep or not sufficiently tamped the shot may blow the tamping from the hole. A windy shot may result from using two grades of powder in the same hole, or from firing two shots at the same time, in a close place. The gases produced by the first shot, in a close place, will be fired by the flame of the second blast, thereby causing a local explosion. The effect is similar to an overcharge of powder.

QUESTION—State fully the dangers arising from coal dust and what you would do to prevent accidents from the same.

ANSWER—Where dust is allowed to accumulate at the working face or on the roads and traveling ways in a mine, there is always danger of a dust explosion by reason of the dust being raised and carried in the air current to such an extent that the air becomes explosive. In order to prevent accidents under such conditions, no accumulations of dust should be permitted at the working face, and all roads, traveling

ways and airways should be cleaned at regular short intervals. Only permissible powder should be used and strict rules enforced in regard to the firing of shots. The danger of dust is increased if gas is present even in small quantities. There should be a regular and ample supply of air in circulation, and the mine should be examined and inspected by competent firebosses and safety inspectors, whose duty it is to inspect every working place while the men are at work and prevent any unsafe practices.

QUESTION—With a pressure, at sea level, of 14.7 lb. per sq. in., and a barometer of 30 in., how far can you set a pump from water, vertical measurement, and not use rods?

ANSWER—Assuming the pump is located at sea level and subject to a barometric pressure of 30 in., a common rule is to limit the suction head of the pump, in feet, to $\frac{2}{3}$ of the barometric pressure in inches. Thus, for a barometric pressure of 30 in., a pump should not be located more than $0.9 \times 30 = 27$ ft. above the water level in the sump, measured vertically.

QUESTION—(a) Assuming a sump 20 ft. long, 10 ft. wide and 10 ft. deep is full of water, how many gallons will it hold? (b) How long will it take a pump, with a cylinder 4 in. in diameter and a 6-in. stroke, making 60 strokes a minute, 100 lb. pressure, to pump the sump dry?

ANSWER—(a) The cubic capacity of this sump is $20 \times 10 \times 10 = 2,000$ cu. ft. Then, estimating 7.48 gal. per cu. ft., the capacity of the sump is $7.48 \times 2,000 = 14,960$ gal.

(b) A pump making 60 strokes per minute, the length of stroke being 6 in. or 0.5 ft., has a piston speed of $60 \times 0.5 = 30$ ft. per min. The piston displacement of a 4-in. pump running at this speed is $30(0.7854 \times 4^2) \div 144 = 2.618$ cu. ft. per min. Assuming a water-end efficiency of 85 per cent, the

The Weather Vane of Industry

News Notes Chronicling the Trend of Industrial Activities on Which Depends the Immediate and Future Market for Coal

ENCOURAGING features in the industrial situation as emphasized by the August survey of the U. S. Employment Service are the generally bountiful harvest, indications of improvement in iron and steel, marked re-employment in railroad occupations and the continued strength of textiles, particularly of cottons.

A marked increase in industrial optimism is noted, business men generally inclining to the belief that the worst part of the depression is over and that the future will witness improvement of a healthy and lasting character, even though it be somewhat slow in developing.

Industrial classifications showing increases in employment are food and kindred products, textiles and their products, iron and steel and their products, leather and its finished products; stone, clay and glass products; metals and metal products other than iron and steel; tobacco manufactures, and railroad repair shops.

Statistics are gathered each month by special agents in sixty-five principal industrial centers and transmitted by telegraph. In all, 1,428 firms each usually employing more than 500 workers, or a total of 1,600,000, are comprised in the survey. On Aug. 31 these 1,428 firms had 16,269 more employees on their payrolls than they carried on July 31, an increase of 1.08 per cent.

Below are given in tabular form the figures by industries, and, on the map, the locations of decreases and increases in August employment as compared with that in July.

Mid-Atlantic District Optimistic

Reports from thirty cities in the Middle Atlantic district indicate a more general feeling of optimism than has prevailed for several months. Here and there signs of improvement in the steel industry are evident. Building construction is fairly under way in all parts of the district. Railroads are re-employing men laid off several months ago and are beginning to repair

equipment. Textiles, shoes, and clothing are fairly active.

Textiles Gain in New England

In the New England district textiles have shown a decided improvement, with bright prospects for woollens during the entire winter. An increase in building operations is indicated by reports. Shoes and leather are on a basis of about 70 per cent.

Southern Roads Take on Men

Fifteen railroad companies with headquarters in the South Atlantic district report a total of 225,912 employees July 31, compared with 205,644 June 30, a gain of 20,268. Three hundred and ten textile mills in Virginia, North Carolina, South Carolina and Georgia, which had 96,134 employees July 15, reported a total of 99,005 Aug. 15, an increase of 2,871.

North Central Districts Speed Up

Better business conditions noted in the North Central districts are directly traceable to the harvest and the movement of crops. Flour mills are operating at practically full capacity, railroad repair shops continue to increase their forces, packing plants are busy and retail sales have improved. The work-clothing industry has shown marked improvement, and boots and shoes have been increasingly busy since early spring. Some of the larger manufacturers of low-priced automobiles are operating at full capacity, but with considerably fewer men than they had in January and February, 1920. Furniture has picked up and is now operating at about 80 per cent. On the other hand, implement and equipment lines are much curtailed.

Industry Below Normal in Far West

Industry in general continues below normal in the Pacific division, though unemployment has been slightly relieved by increased seasonal activities. Lumber is operating 65 per cent of normal, with many mills and logging camps closed. Some food-preserving plants are operating on a restricted basis, due to market conditions. Increased building activities are observable in some cities. Farm labor demand is everywhere below seasonable average, though fruit harvesting is expected to require extra help.

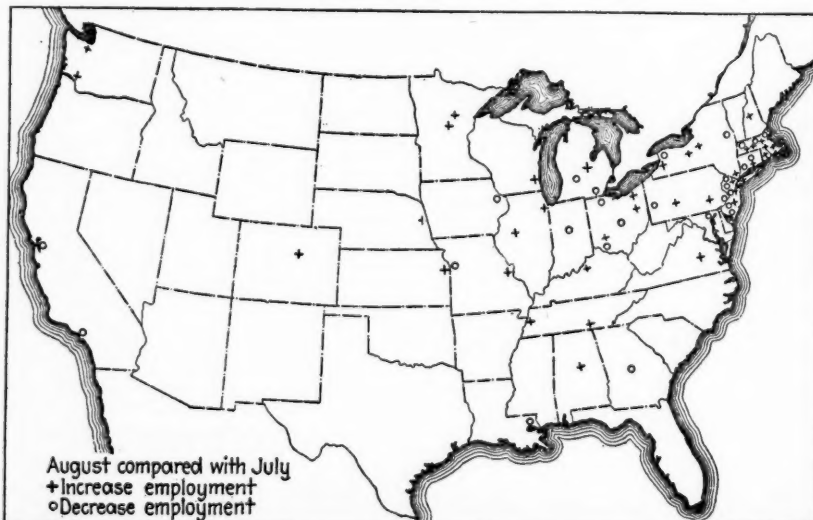
INDUSTRIES REPORTING A DECREASE IN EMPLOYMENT IN AUGUST, 1921

Industry	Amt. of Dec.	P.c. Dec.	Weight*
Liquors and beverages..	130	8.4	0.09
Vehicles for land transportation.....	5,520	3.06	11.4
Lumber and its manufacture.....	639	2.8	1.4
Miscellaneous.....	6,604	2.4	17.5
Paper and printing.....	701	1.4	3.2
Chemicals and allied products.....	644	0.9	4.5
Total.....	14,238		

INDUSTRIES REPORTING AN INCREASE IN EMPLOYMENT IN AUGUST, 1921

Industry	Amt. of Inc.	P.c. Inc.	Weight*
Food and kindred products.....	9,450	7.6	8.7
Stone, clay and glass.....	660	5.9	0.77
Railroad repair shop.....	3,423	5.7	4.2
Metals and metal products other than iron and steel.....	3,877	5.4	4.9
Leather and its finished products.....	2,336	4.4	3.6
Tobacco manufacture.....	1,238	4.0	2.1
Iron and steel products.....	6,726	2.2	20.1
Textiles and products.....	2,797	1.07	17.2
Total.....	30,507		

* Per cent employed August 31 to total reported employed in 14 groups.



63 Companies Submit Bids on Bituminous Steam Coal for Navy Department

BIDS on bituminous steam coal were opened by the Navy Department on Sept. 6, after the original offers made Aug. 23 had been returned to the bidders because of the elimination of a clause making the bids subject to increases or decreases in wage scales. The list of bidders given below are referred to in the text by number.

1. Alden Coal Mining Co., New York City.
 2. Berwind-White Coal Mining Co., New York City.
 3. C. G. Blake Co., Cincinnati, Ohio.
 4. Walter Bledsoe & Co., Terre Haute, Ind.
 5. Wm. C. Atwater & Co., Inc., New York City.
 6. W. H. Blight, Elmira, N. Y.
 7. Boehmer Coal Co., St. Louis, Mo.
 8. W. H. Bradford & Co., Inc., Philadelphia, Pa.
 9. Castner, Curran & Bullitt, New York City.
 10. Chesapeake & Ohio Coal Agency, Boston, Mass.
 11. Chicago, Wilmington & Franklin Coal Co., Chicago.
 12. Chesapeake & Ohio Coal & Coke Co., New York City.
 13. Chicago-Springfield Coal Co., Springfield, Ill.
 14. Coalfield Fuel Co., Boncar, W. Va.
 15. Commercial Coal Co., New York City.
 16. Crerar, Clinch & Co., Chicago.
 17. Crescent Fuel Co., New York City.
 18. Crozer-Pocahontas Co., Philadelphia, Pa.
 19. Davis Coal & Coke Co., Baltimore, Md.
 20. Dexter & Carpenter, Inc., New York City.
 21. Eastern Coal & Export Corp., Richmond, Va.
 22. Eastern Fuel Co., New York City.
 23. Ehrlich-Pierce Coal Co., Chicago.
 24. Ender Coal & Coke Co., Chicago.
 25. Eyre Fuel Co., New York City.
 26. Iron Trade Products, Pittsburgh, Pa.
 27. Fayette Smokeless Fuel Co., Mt. Hope, W. Va.
 28. Flat-Top Fuel Co., Inc., Bluefield, W. Va.
 29. Gauley Mountain Coal Co., Richmond, Va.
 30. H. B. W. Haff, New York City.
 31. Hall Bros., Baltimore, Md.
 32. Hedstrom-Schenck Coal Co., Chicago.
 33. International Coal Corp., Philadelphia.
 34. Jenkins & McCall Coal Co., Baltimore, Md.
 35. Lake & Export Coal Sales Corp. of Ill., Chicago.
 36. Logan Coal Co., Philadelphia.
 37. Majestic Coal Co., New York City.
 38. W. A. Marshall Co., New York City.
 39. Maryland Coal & Coke Co., Philadelphia, Pa.
 40. Wassen Coal Co., Chicago.
 41. Metropolitan Coal Co., Boston.
 42. Morgantown Coal Co., Morgantown, W. Va.
 43. Nottingham & Wren Co., Norfolk, Va.
 44. O'Gara Coal Co., Chicago.
 45. Old Ben Coal Corp., Chicago.
 46. Peabody Coal Co., Chicago.
 47. Pocahontas Fuel Co., New York City.
 48. Producers Fuel Co., Pittsburgh, Pa.
 49. Sangamon County Mining Co., Chicago, Ill.
 50. L. A. Sneed Co., Washington, D. C.
 51. Standard Coal Sales Co., Inc., New York City.
 52. Sterling-Midland Coal Co., Chicago.
 53. Thorne, Neale & Co., Philadelphia.
 54. J. H. Weaver & Co., Philadelphia.
 55. West Kentucky Coal Co., Paducah, Ky.
 56. Weston Dodson & Co., Bethlehem, Pa.
 57. Whitley & Foedisch, Philadelphia.
 58. Morrisdale Coal Co., Philadelphia.
 59. Georges Creek & Phoenix Mining Corp., Philadelphia.
 60. Great Lakes Coal & Coke Co., Chicago, Ill.
 61. Imperial Coal Corporation, New York City.
 62. Roberta Coal Co., Johnstown, Pa.
 63. Quemahoning Coal Co., Somerset, Pa.
- SCHEDULE 8431—Class 258, 30,000 tons steaming coal, as follows:
- A. For delivery f.o.b. vessels or barges under chutes at piers, N. Y. Harbor—Bid 20, \$7.14 (no tax); bid 30, 15,000 tons, \$7.86; bid 36, 15,000 tons, \$8.11; bid 38, \$7.12; bid 51, \$6.39; bid 54, \$7; bid 61, 15,000 tons, \$6.33.
- B. For delivery f.o.b. suitable lighters or barges alongside vessel, N. Y. Harbor, or at the Navy Yard Brooklyn—Bid 15, \$6.89; bid 20, \$7.54 (no tax); bid 38, \$7.38; bid 51, \$6.69; bid 54, \$7.53.
- C. For delivery in the harbor of New York City, in lighters to be placed alongside ships of the Navy, coal to be unloaded, stowed and trimmed in their bunkers with use of ships' winches—Bid 15, \$7.84; bid 51, \$7.75; bid 54, \$8.63.
- Class 259, 9,000 tons of steaming coal:

A. For delivery f.o.b. vessels or barges under chutes at piers, Philadelphia—Bid 15, \$6.49; bid 20, \$6.63 (no tax); bid 26, 2,000 tons, \$6.72; bid 36, \$7.93; bid 38, \$6.56; bid 54, \$6.43; bid 61, \$6.15.

B. For delivery f.o.b. suitable lighters or barges alongside vessel in the harbor of Philadelphia or at the Navy Yard, Philadelphia—Bid 15, \$6.89; bid 20, \$6.83 (no tax); bid 26, \$7.26; bid 38, \$6.81; bid 54, \$6.59; bid 61, \$6.40.

C. For delivery f.o.b. cars at Navy Yard, Philadelphia—Bid 15, \$6.59; bid 20, \$7.21 (no tax); bid 26, \$7.32; bid 36, \$8.18.

D. For delivery in the harbor of Philadelphia, in lighters to be placed alongside ships of the Navy, coal to be unloaded, stowed and trimmed in their bunkers with use of ships' winches—Bid 15, \$7.69; bid 54, \$7.39.

Class 260, 900 tons steaming coal:

A. For delivery f.o.b. U. S. naval barges, Baltimore, for shops at the Naval Academy, Annapolis, Md.—Bid 20, \$6.56 (no tax); bid 26, \$6.65.

B. For delivery in supplier's barges alongside ships or alongside wharf at the Naval Academy, Annapolis, Md.—Bid 20, \$7.16 (no tax); bid 26, \$7.81.

Class 261, 240,000 tons steaming coal:

A. For delivery f.o.b. vessels or barges under chutes at respective piers, Hampton Roads, Va., and or into navy storage at naval fuel depot, Sewall's Point, in such quantities and at such times as called for—Bid 3, \$6.16 for 60,000 tons only; bid 5, 60,000 tons at \$5.18 gross ton, \$90,000 tons at \$5.23 and 9,000 tons at \$5.28; bid 10, 25,000 tons, \$5.60 and 70,000 tons at \$6; bid 18, 60,000 tons, \$5.88, f.o.b., Lamberts Point; bid 20, \$5.84, f.o.b. Lamberts Point (no tax); bid 27, 120,000 tons \$5.43; bid 26, 16,000 tons, \$7.29; bid 47, \$5.03 (no tax); bid 21, 50,000 tons, \$5.60, for Newport News only; bid 9, \$5.04; bid 12, 7,500 tons, \$5.88, Sewall's Point or Newport News.

B. For additional charges on all work done, if required, on reasonable notice, in coaling from navy barges, trimming and stowing into bunkers of government-owned vessels not in position to handle their own coal, as follows:

In Hampton Roads, Va., in regular bunkers or side bunkers, in Newport News harbor, Va., in regular bunkers or side bunkers, in Norfolk harbor, Va., in regular bunkers or side bunkers—Bid 26, \$1.65 straight time and \$2.475 overtime.

SCHEDULE 8432—Class 262, for delivery f.o.b. hopper bottom cars at the submarine base, Submarine Base, Connecticut:

A. Three hundred tons run-of-mine coal—Bid 17, \$8; bid 22, \$7.87; bid 30, \$3.35, f.o.b. net; bid 33, \$8.44; bid 26, \$7.55, \$7.88, \$8.15, \$8.62, \$7.70 and \$7.98; bid 42, \$7.67, \$8.38, \$8.18, \$7.68, \$8.10, \$9.78 and \$7.57; bid 56, \$8.75; bid 62, \$7.61; bid 63, \$8.60.

Class 263, for delivery f.o.b. bins (truck delivery) to Naval Hospital, Chelsea, Mass.:

A. Five thousand tons run-of-mine coal—Bid 22, \$7.87, f.o.b.; bid 30, \$3.35, f.o.b. net; bid 41, \$9.97; bid 56, \$11.75; trimming 25 cents additional.

Class 266, for delivery f.o.b. hopper bottom cars to naval ammunition depot, Iona Island, N. Y.:

A. Eighteen hundred tons run-of-mine coal—Bid 6, \$5.85; bid 17, \$6.91; bid 15, \$7.26; bid 20, \$6.36 and \$6.66, no tax; bid 22, \$6.75; bid 30, \$3.35 net, f.o.b.; bid 33, \$7.29; bid 26, \$6.71, \$6.87, \$7.11, \$7.47, \$7.76 and \$6.99; bid 42, \$6.60, \$6.69, \$7.26, \$7.04, \$6.70, \$6.98, \$8.66 and \$6.59; bid 25, \$6.72; bid 56, \$7.60; bid 59, \$3.25, f.o.b.; bid 61, \$6.56; bid 58, \$3; bid 62, \$6.71; bid 63, \$7.60.

Class 267, for delivery in suitable 600-ton lighters without hatch covers alongside at the Navy Yard, Brooklyn, N. Y.:

A. Forty thousand tons run-of-mine coal—Bid 1, \$7.50; bid 2, \$7.25; bid 15, \$6.47; bid 20, \$6.39 and \$6.73 (no tax); bid 22, \$6.26 and \$5.81; bid 30, 20,000 tons, \$7.25 net; bid 37, October, \$6.69; November to March 31, \$7.37; bid 26, \$6.51, \$6.69, \$6.93, \$7.63, \$6.51 and \$6.80; bid 25, \$6.54; bid 51, \$6.75; bid 53, \$6.59; bid 54, \$7.23; bid 56, \$7.50; bid 57, \$6.28; bid 58, \$6.50; bid 63, \$7.15.

B. One thousand tons nut and slack coal—Bid 56, \$8.50; bid 61, \$6.25.

Class 268, for delivery f.o.b. hopper-bottom cars at navy supply depot, South Brooklyn, N. Y.:

A. Ten thousand tons, run-of-mine coal—Bid 6, \$5.85; bid 17, \$6.61; bid 15, \$7.24; bid 20, \$6.48 and \$6.82 (no tax); bid 22, \$6.75; bid 30, \$3.45 net f.o.b.; bid 33, \$7.54; bid 38, \$7.40, \$6.84 and \$6.94; bid 26, \$6.83, \$7.01, \$7.23, \$8 and \$7.15; bid 48, \$6.95; bid 42, \$6.41, \$6.31, \$8.66, \$6.98, \$7.26, \$6.42 and \$7.04; bid 25, \$6.95; bid 53, \$7.05; bid 54, \$7.51; bid 56, \$7.86; bid 59, \$3.19 f.o.b.; bid 58, \$7.15; bid 53, 5,000 tons, \$3.00 f.o.b.

Class 269 for delivery f.o.b. hopper-bottom cars to naval airship construction and experiment station, Lakehurst, N. J. (government siding):

A. Ten thousand five hundred tons run-of-mine coal—Bid 6, \$6.13; bid 8, \$7.50; bid 17, \$7.20; bid 19, \$6.85 and \$7.65; bid 15, \$7.29; bid 20, \$6.64 and \$6.94 (no tax); bid 22, \$7.03 and \$6.50; bid 30, \$3.50 net f.o.b.; bid 33, \$7.57; bid 31, \$6.93; bid 26, \$6.69; \$6.87, \$7.09, \$7.76 and \$6.97; bid 48, \$6.98; bid 42, \$6.59, \$7.54.

\$7.32, \$6.70, \$7.26, \$8.94, \$6.59 and \$6.69; bid 25, \$6.98; bid 54, \$7.55; bid 56, \$7.89; bid 59, \$3.25; bid 61, \$6.84; bid 58, \$3; bid 62, \$7.15; bid 63, 5,000 tons \$6.85.

B. Five hundred tons nut and slack coal—Bid 6, \$5.88; bid 56, \$8.89; bid 69, \$6.67.

Class 272, 74,000 tons run-of-mine coal—Bid 22, \$5.75 and \$5.30.

1a. For delivery in lighters, f.a.s. wharf at the Navy Yard, Philadelphia—Bid 19, \$6.01 and \$6.82; bid 15, \$6.79; bid 20, \$5.89 and \$6.24 (no tax); bid 22 plus 8 per cent; bid 38, \$6.21, \$6.31 and \$6.67; bid 26, \$5.86, \$6.05, \$6.26, \$6.93 and \$6.15; bid 25, \$6.19; bid 53, \$6.26; bid 56, \$7.11; bid 57, \$5.69 at coal piers; bid 58, 30,000 tons, \$5.75; bid 63, 50,000 tons \$6.45.

2a. For delivery f.o.b. hopper bottom cars, navy yard Philadelphia—Bid 17, \$6.35; bid 19, \$6.93; bid 15, \$6.59; bid 20, \$5.94 and \$6.24, no tax; bid 33, \$6.85; bid 36, 30,000 tons \$7.68; bid 26, \$7.04; bid 48, \$6.28; bid 42, \$6.17, \$6.84, \$6.62, \$6, \$6.56, \$8.24 \$5.89 and \$5.99; bid 25 \$6.27; bid 53, \$6.35; bid 56, \$7.17; bid 57, \$5.94; bid 59, \$3.36 f.o.b.; bid 58, 30,000 tons, \$7.23.

3a. F.o.b. barges under chutes, Philadelphia—Bid 19, \$5.86 and \$6.67; bid 15, \$6.49; bid 22, plus 3 per cent; bid 36, \$7.43; bid 26, \$5.37, \$5.55, \$5.77, \$6.45 and \$5.65; bid 25, \$6; bid 56, \$6.91; bid 61, \$6.14 and \$5.89; bid 58, 30,000 tons 5.23; bid 63, \$6.30.

Class 273, 36,000 tons run-of-mine coal—Bid 22, \$5.75 and \$5.30.

1a. For delivery f.a.s. Navy Yard, Washington, in suitable canal boats or barges—Bid 22, plus 8 per cent.

2a. For delivery f.o.b. dump-bottom cars on tracks in the Navy Yard, Washington—Bid 17, \$6.35; bid 19, \$6.12 and \$6.93; bid 27, \$5.98; bid 33, \$6.85; bid 31, \$6.23; bid 38, \$7.12, \$6.56 and \$6.66; bid 39, \$7; bid 26, \$6.15; \$6.37, \$7.04, \$7.16, \$5.97 and \$6.24; bid 48, \$6.28; bid 42, \$5.94 and \$6.30; bid 25, \$6.27; bid 21, \$5.98; bid 9, \$5.42; bid 12, \$6.64 (with tax), \$6.54 (no tax); bid 56, \$7.17; bid 57, \$5.94; bid 59, \$3.47 f.o.b.; bid 61, 12,000 tons, \$6.14; bid 62, \$6.53.

Class 274. (A), 900 tons run-of-mine coal—Bid 20, \$7.29 and \$7.59 (no tax); bid 34, \$8.48; bid 31, \$7.64; bid 26, \$7.36; \$7.54, \$7.78, \$8.43 and \$7.66; bid 56, \$10.89.

Class 275, for delivery f.o.b. barge alongside sea wall, Naval Academy, Annapolis, Md., where directed to be discharged by the government:

A. Nineteen thousand eight hundred tons run-of-mine coal—Bid 19, \$6.46 and \$7.27; bid 20, \$6.40 and \$6.75 (no tax); bid 34, \$7.48; bid 31, \$6.58; bid 38, \$7.12, \$6.56 and \$6.66; bid 26, \$6.33, \$6.51, \$6.75, \$7.40 and \$6.63; bid 56, \$10.89; bid 63, 10,000 tons, \$7.25.

Class 276, for delivery f.o.b., hopper-bottom cars at the Naval Hospital, Norfolk (Portsmouth), Va.:

A. Two thousand tons run-of-mine coal—Bid 5, 2,000 tons, \$5.73; bid 18, \$3.08 f.o.b.; bid 20, \$6.43 (no tax); bid 28, \$6.37 (no tax); bid 26, \$7.26; bid 42, \$8.80, \$9.08, \$8.86 and \$10.48; bid 43, \$6.60; bid 47, \$5.52 (no tax); bid 21, \$6.09 and \$5.81; bid 50, \$6.14; bid 9, \$5.53; bid 56, \$7.28; bid 62, \$8.58.

Class 277, for delivery at the navy yard, Norfolk (Portsmouth), Va.

A. 25,000 tons run-of-mine coal:

1a. For delivery f.o.b. cars in Navy Yard—Bid 5, 12,500 tons at \$5.68 and 12,500 tons at \$5.73; bid 18, \$3.08 f.o.b.; bid 20, \$6.43 (no tax); bid 27, \$5.93; bid 29, \$5.94; bid 28, \$6.37 (no tax); bid 26, \$7.26; bid 42, \$8.83, \$9.08, \$8.86, \$8.80 and \$10.48; bid 43, \$6.35; bid 47, \$5.52 (no tax); bid 21, \$6.09 and \$5.81; bid 50, \$6.14; bid 9, \$5.53; bid 56, \$7.28.

2a. For delivery f.o.b. barge at Navy Yard water front—Bid 26, \$7.66; bid 43, \$6.35.

3a. For delivery, stored, piled and trimmed in bins at the Navy Yard at the contractor's expense—Bid 5, 12,500 tons, \$6.58, and 12,500 tons \$6.63; bid 43, \$7.10.

Class 278, for delivery f.o.b. hopper-bottom cars at the naval operating base, Hampton Roads, Va.

A. Twenty-five thousand tons run-of-mine coal—Bid 5, 12,500 tons \$5.68 and 12,500 tons, \$5.73; bid 18, \$3.08 f.o.b.; bid 14, \$6.39; bid 27, \$5.93; bid 28, \$6.37 (no tax); bid 39, \$3.80, f.o.b.; bid 26, \$7.26; bid 42, \$9.18, \$8.96, \$8.90 and \$10.58; bid 43, \$6.60; bid 21, \$6.09 and \$5.81; bid 50, \$6.14; bid 9, \$5.53; bid 56, \$7.28.

B. Five hundred tons nut and slack coal—Bid 28, \$6.37 (no tax); bid 39, \$2.40 f.o.b.; bid 43, \$5.85; bid 50, \$6.14; bid 56, \$6.74.

Class 278½, for delivery f.o.b. mines for shipment to naval training station, Great Lakes, Ill., under government bills of lading:

B. Sixteen thousand tons of screenings—Bid 4, \$2.25; bid 13, \$2.80; bid 11, \$2.24 f.o.b. mines; bid 16, \$2.128; bid 24, \$2.13; bid 23, \$2.44 gross ton and \$2.18 net; bid 32, \$4.32 and \$4.23; bid 35, date to Jan. 1, \$1.568, Jan. 1 to March 31, \$2.24; bid 40, \$9.89; bid 49, \$1.50; bid 44, \$1.85 net; bid 45, \$2.35; bid 46, \$2.02; bid 52, \$2.52 and \$2.24; bid 7, \$2.18; bid 60, \$2.51; bid 55, \$1.40.

U.S. Fuel Co. Wins National First-Aid Cups; New River Co. Mine Rescue Contest

THE International First-Aid and Mine-Rescue Meet, at the Coliseum, St. Louis, Mo., ended Sept. 3 with a banquet at the Coliseum and with the bestowal of awards and prizes in the first-aid and mine-rescue contests conducted in the Coliseum Sept. 2 and 3.

The first prizes in the first-aid contest, a bronze cup, a silver cup and a gold medal, were awarded to the United States Fuel Co. team of Westville, Ill., Stephen Shaffer, captain. The second prizes, a silver cup and silver medal, were won by the team of the Clinchfield Coal Corporation, of Wilder, Va., William E. Wolfe, captain. Third prizes, a silver cup and a bronze medal, were won by the Superior Coal Co. team of Gillespie, Ill., Charles Miller, captain.

In the International Mine-Rescue contest, the first prizes, three cups and a gold medal, were won by the New River Co. team of McDonald, W. Va., Fred Lamb, captain. Second prizes, a silver cup and a silver medal, were won by the H. C. Frick Co. team, Leisenring, Pa., Stanley J. Comiskey, captain. Third prizes, a silver cup and a bronze medal, went to the Benton district team, Benton, Ill., Robert Weir, captain.

In the combination mine-rescue and first-aid contest the teams winning cups were: First, Independent Coal & Coke Co. team, Salt Lake City, J. R. Roaf, captain; second, Benton district team, Illinois; third, Owl Creek Coal Co. team, Gebo, Wyo., William Knowles, captain.

Seventeen state awards in first-aid contests were made. The Illinois championship was held by the Westville team, which also won the general championship. The Missouri award was won by the team of the Pierce-Hess Coal Co., Bevier. There were six state awards in mine-rescue championships, the Benton district team receiving the Illinois award.

At the banquet the speakers were Mayor Kiel, W. D. Ryan of the U. S. Bureau of Mines; Frank Farrington, president of the Illinois district of the United Mine Workers of America; Lieutenant-Governor Lloyd, who said he began life as a mine worker; and Representative M. E. Rhodes of the Thirteenth Missouri district.

Representative Rhodes, speaking of the West Virginia mine warfare, said that "unless there is an improvement, the Federal Government sooner or later, in order to protect the public, will be forced to take a hand in the settlement of disputes between labor and capital."

In the course of the mine-rescue contest, Sept. 3, a member of one of the teams was overcome by fumes, and was revived by genuine rescue work. He later went back into the contest. It was said that his mask slipped, exposing him to the fumes.

Director Bain, of the Bureau of Mines, in the course of his address, made use of a particularly happy figure in explaining the function of the Bureau of Mines in safety work. He explained the steps of a process in the making of sulphuric acid. He likened the Bureau of Mines to the catalyzer and the operators and the mine workers to the reagents. When the reagents are brought together in the presence of the catalyzer, the results desired are obtained.

One of the impressive features of the meet was the ceremonial in which a formal oath to universal safety was pledged. An indication of the widespread interest in the safety movement was the presence in the contest of representative of Mexican and British Columbian miners.

The address of T. T. Brewster, in which he explained what the mine operator can do for safety and health in and about mines, and the address of D. A. Frampton, the official representative of the United Mine Workers of America, were of particular interest. Others who delivered formal addresses were the Lieutenant Governor of Missouri; the Mayor of St. Louis; G. W. Traer, of Chicago; Colonel J. A. S. Ritson, Department of Mines of Great Britain; George S. Rice, chief mining engineer of the U. S. Bureau of Mines; J. W. Paul, U. S. Bureau of Mines; Robert Strachen, representing the Minister of Mines of British Columbia; Robert M. Medill, director Department of Mines and Minerals of Illinois; A. J. Moorshead, of Chicago.

Glen Alden Explains Why It Cannot Work Shallow Mines Under Kohler Law or Accept Fowler Provisions

IN REPLY to criticism that the Glen Alden Coal Co. should accept the provisions of the Fowler bill, under which it would pay \$1,500,000 yearly and mine under the direction of three commissioners, that company, through William W. Inglis, its president, made on Sept. 5 the following statement:

It seems to be seriously contended that if this company were to accept the terms and provisions of the so-called Fowler bill it would not be necessary for us to close down any of our operations. With this we cannot agree. From a business standpoint it is out of the question for this company to accept the terms of the Fowler bill, for it is impractical of application to our conditions.

The Fowler bill should not have been so drawn as to apply to the collieries the operation of which cause no surface damage. At present, if accepted by us, it would apply to all of our operations and we would have to pay the tax on all the coal we produce, although the mining of most of it will not result in any such damage. We now pay taxes on our coal properties of upward of \$2,500,000 a year, and this tax provided by the Fowler bill applied to all coal produced by us would amount to approximately \$1,500,000 per year more.

If limited to operations causing surface damage, the tax would not exceed one-fourth of this sum.

None of the other large companies will accept the bill because they can continue most of their operations without violating the Kohler bill. We would, therefore, pay practically the entire tax, all of which would have to be absorbed in our cost of production. It could not, in competition with the coal of other companies who do not pay such taxes, be added to the price of the coal.

BELIEVE KOHLER BILL TO BE UNCONSTITUTIONAL

It is confidently believed that the Kohler bill is unconstitutional and will be held so by the courts. In that event we having alone accepted the bill would alone be required to pay the tax, and for all time.

The fund to be raised by this tax is to be applied to the payment of damages wherever they occur in the anthracite region, the substantial effect of which would be that this company would have to assume the payment of practically all the damage done by all the companies. It would also mean that the large damage done by other companies during the past six years would be paid for by us, although, as is so well known, during such time we have been repairing properties affected by subsidence due to our mining.

Moreover, there is nothing in the Fowler bill which would warrant us in believing that an acceptance of the bill and the payment of the tax imposed would give us the right to continue second mining in this city [Scranton] and vicinity. Whether or not it could be done would depend upon the arbitrary decision of a commission composed of three men who are relatively unacquainted with our coal mining operations, and who could, if their judgment so indicated, decline to allow any second mining to be done by us except under prohibitive conditions. In other words, it takes the management of the properties largely from the officials of the company, and puts it in the hands of the commission.

There is again no assurance that acceptance of the Fowler bill would relieve us of the penalties of the Kohler bill. Under Section Sixteen of the former, the owner or operator is only relieved from penal action if the mining operations, in pursuance of the order of the commission, are done in a careful and skillful manner. In almost any instance of surface subsidence a claim that the mining which caused the same was done in a careless and unskillful manner might be maintained if an arrest of the officials was made therefor. In other words, it is highly probable that to do second mining under the provisions of the Fowler bill, even with the assent of the commission, would subject the officials of the company to the same penalty as if the bill were not accepted.

Our predecessor, the Delaware, Lackawanna & Western Railroad Co., at the time of the hearing on these bills, through its officials, stated to those who were most interested and most enthusiastic in urging the passage of the bills and the signing thereof by the Governor, that all damage done by its mining would be repaired. It has reiterated its position at every proper occasion.

It was through our knowledge of the conditions peculiar to our operations that we clearly foresaw that the passage of these bills would result in shutting down part of our mines, the loss of production caused thereby, the unemployment of a large number of mine workers, and the loss to the community of a pay roll of \$800,000 per month. When these facts were called to the

attention of the leaders in the movement for the passage of the "Mine Cave Bills," they seemed either to doubt our sincerity or to believe that such a result was preferable to a voluntary agreement between the company and the representatives of the public.

We deeply regret the necessity of closing some of our mines, but can find no practical method by the adoption of which we can avoid doing so.

We believe that we should not pay for damage done by other coal companies, either during the past six years or in the future. We are willing to pay for the damage done by our mining.

We do not believe that all of the coal which we mine should be subjected to the tax, but only that portion of it in the area affected by mine caves.

We believe that our officials should not be subjected to arrest on a charge of careless or unskillful mining when we are mining in strict compliance with orders of the commission.

We believe that we ought not allow the operation and management of a portion of our property to be placed in the hands of a political body known as the Mine Cave Commission.

We believe that we should not be called upon to pay a substantial tax on all the coal we mine when our chief competitors are not required to do so.

We will not accept the Fowler bill until the question of the constitutionality of the Kohler bill is determined.

We believe that no business man would do other than we are doing, and, for the reasons stated, we ought not, and cannot, accept the provisions of the Fowler bill.

Equipment Engineers Meet at Huntington

THREE separate classes of officials can be found around the coal mines, though in practice they are not entirely separated and many cover all three—personnel officials, locating and designing engineers and equipment users. The latter will meet at Huntington, W. Va., Sept. 20 to 23 as guests, or as members, of the West Virginia-Kentucky Association of Mine, Mechanical and Electrical Engineers at their first annual convention.

On Tuesday, Sept. 20, reports will be made by a committee on practical methods of reducing kilowatt-hours per ton of coal mined, Roscoe Woltz, chairman, and by a committee on depreciation of mine equipment, J. J. Fluck, chairman. On the same session, which will occupy only the forenoon, R. J. Wensley will read a paper entitled "The Automatic Substation for Coal Mines."

On Wednesday, Sept. 21, reports will be made by the committee on power plants, R. R. Webster, chairman, by the committee on care and operation of the nickel-iron type of mine-locomotive battery, C. A. Hornell, chairman, and by the committee on mine-locomotive headlights, George Donelson, chairman. W. P. Bovard will deliver an address on "Bonding Track in Coal Mines." On the day following reports will be made by the committee on care and operation of the lead type of mine-locomotive battery, R. A. Whetstone, Jr., chairman; by the committee on repair-shop equipment and methods, C. J. Fuetter, chairman; by the committee on comparison of belt, chain, gear and direct-connection drive for stationary equipment such as mine pumps and fans, J. B. Pennman, chairman, and by the committee on tests and testing instruments, A. M. Rosenblatt, chairman. F. Auld will deliver an address on the elementary principles of electricity.

On Friday, Sept. 23, E. Wanamaker, electrical engineer of the Chicago, Rock Island & Pacific Railway Co., will describe the electric arc-welding process and its commercial application and the committee on specification of equipment including a discussion of 40-deg. vs. 50-deg. ratings of electric motors, J. S. Shepherd chairman, will report, after which a business meeting will be held. The afternoons of all the three days will be occupied by visiting the Coal and Industrial Exposition, which will have seventy-five exhibitors. Should time be available the following subjects will be discussed: "How often should transformer oil be renewed or filtered?" "Combination vs. straight storage for

gathering locomotives"; "Flat vs. concentric; rubber vs. tape or braid for machine or locomotive cable."

The address of the secretary is Room 212, Robson-Prichard Building, Huntington, W. Va. The fee for active membership in Class A is \$5. Class A men are those in charge of electrical or mechanical work of a mining company. Active membership in Class B calls for a fee of \$4 a year. Those in Class B are men who are engaged in, but not in charge of, electrical work for a mining company. Associates are persons representing a company manufacturing or selling mining supplies, mine superintendents, general superintendents, managers or other mine officials, technical-publication editors and technical graduates of colleges and correspondence schools. The fees for these are \$3 a year.

Freight-Car Loadings During Week Ended Aug. 27 Made New Record for 1920

AN INCREASE of 13,273 in the number of cars loaded with revenue freight during the week ended Aug. 27, compared with the previous week, is shown by a report of the American Railway Association. The total for the week was 829,709 cars. This is the largest week's loading since Dec. 11, 1920, but as compared with the corresponding week of 1920 it shows a loss of 171,599 cars.

The principal increases as compared with the week before were in the loading of merchandise and miscellaneous freight and in coal. The total number of cars loaded with merchandise and miscellaneous freight was 499,421, an increase of nearly 8,000 as compared with the week of Aug. 20, but 35,000 less than for the corresponding week of last year.

Loading of grain and grain products was 59,505 cars, a decrease as compared with the week before of 370, but 13,000 cars more than for the same week of 1920. The loading of live stock amounted to 28,070 cars, or a decrease of 1,040 from the preceding week and slightly less than for the corresponding week of 1920.

Coal loading amounted to 161,612 cars, an increase of 7,472 as compared with the week before but 50,000 cars less than for the corresponding week of 1920. The loading of forest products was 46,460 cars, an increase of 1,877 over the week before, but about 1,000 cars less than the loading for the corresponding week of 1920. The ore loading was 30,035 cars, a decrease as compared with the previous week of 2,355, while the loading of coke was 4,606 cars, an increase of 170.

Compared by districts, there were increases as compared with the week before in all except the Pocahontas and Northwestern districts, but in all districts the loading was below that for the corresponding week of 1920.

Colorado Industrial Board Sets Aside Wage Cut, Pending Further Investigation

THE Colorado State Industrial Commission, after holding a hearing at Walsenburg, set aside Sept. 10 a wage reduction inaugurated in coal mines of the Colorado Fuel & Iron Co. in Huerfane and Las Animas counties. It placed the old wage scale in effect pending further investigation of the controversy which had tied up many mines since Sept. 1.

A majority of the mine workers of the Colorado Fuel & Iron Co., according to the statement of that company, had agreed to restore the scale in effect from Nov. 1, 1917, to Nov. 30, 1919, under which the company men would get \$5.25 per day instead of \$7.75, coal miners 78c. per ton instead of \$1.02, machine miners 15c. instead of 20c. a ton and loaders 58c. instead of 77c.

In Colorado the law requires thirty days' notice where employers desire to change a wage scale as a counterbalance to the requirement that miners must give a thirty-day notice before entering on a strike. The notice was posted Aug. 31. The new scale would affect 1,200 to 1,500 men.

John McLennan, president of District No. 15, United Mine Workers, points out that under the Rockefeller plan of employment wages may not be reduced until similar reductions have been made in the Central Competitive Field. As the scale in the area mentioned is fixed by agreement

till March 31, he expressed himself as confident that Colorado could not have a new scale till that time, and declared himself willing to accept the decision of the commission, which decision is not binding unless the parties so announce in advance. McLennan regards the action of the company as a repudiation of the Rockefeller plan, but the men seemed anxious to have it repudiated if doing so would restore their work. The company promised that the reduction would be passed on to the consumer.

Hoover Reorganizes Foreign Trade Service On a Commodity Basis

HEREAFTER *Commerce Reports*, issued by the Bureau of Foreign and Domestic Commerce, will be published weekly instead of daily, beginning Monday, Sept. 5. This change is made as part of the general reorganization plan of the foreign-trade service.

It is proposed to place information with regard to foreign trade before American business men in more intelligible and constructive form, according to an announcement of Herbert Hoover. Heretofore a vast amount of material which comes in from a staff of 600 foreign agents, including commercial attachés, consular agents, trade commissioners and special agents, has been presented in a daily mass of reports, unsystematized excepting for arrangement to some extent on a purely geographical basis.

The Bureau of Foreign and Domestic Commerce is being reorganized on a commodity basis, the object of which is threefold:

(1) That specialists in the different great industrial divisions shall be incorporated in the bureau for the purpose of giving expert direction to these many foreign agents as to the investigations and services that will be of importance and most useful to their particular branch of industry.

(2) That they may, by maintaining close communication with trade associations in different industries, keep in touch with the character of service, information, and investigation needed in these industries.

(3) That the material coming in may be edited and prepared in such a manner as to be of the most practicable service.

The following divisions have so far been established:

Iron and steel	Fuels
Lumber	Textiles
Industrial machinery	Shoes and leather products
Electrical equipment and supplies	Agricultural implements and vehicles
Foodstuffs	Rubber products.
Automotive equipment	

The men in charge of these divisions have been chosen from the industries themselves and in most instances have been selected in co-operation with their trade associations, so that they may bring to the department not only specialized knowledge and sympathetic understanding of the problems of these particular industrial groups but in turn may interpret to the foreign staff the needs of these industries and, as stated above, develop the material received in such form as may be of the greatest use in the industry to which it is related.

In the above sense the weekly form will be departmentalized over the different industries as far as practicable. In order that there may be the widest distribution and no delay in important information, special material will be released to the press immediately upon its arrival, in advance of the weekly publication.

The present form of the weekly is not final, and it is expected that changes and improvements will be made in succeeding numbers. The department will welcome suggestions and criticisms that will lead to making the *Commerce Reports* in this new form more useful to subscribers.

THERE IS MUCH INTEREST in Washington in the action which the nominating committee of the American Institute of Mining and Metallurgical Engineers probably will take at the Wilkes-Barre meeting of that organization. There is a general desire among the mining engineers of the government service that the committee select a Western field man rather than a New York engineer for this post.

Three Separate Wage Scales Cause Strikes In Connellsville Region

WAGE increases of 10 per cent were granted Sept. 10 by the following companies in the Connellsville region: The American Coke Corporation, the Republic Iron & Steel Co. and the Tower Hill Connellsville Coke Co. The increase brings the wage scale up to the present Frick base. It is considered quite probable that all other independent operators with the possible exception of W. J. Rainey, Inc., will grant similar advances. There is no change in the Rainey situation.

The labor situation in the Connellsville coke region has been somewhat complicated for some time. Three distinct wage scales are in effect in the region. First there is what is known as the Frick scale, adopted by the H. C. Frick Coke Co. Aug. 1, 1921, under which pick mining is paid for at the rate of \$2.38 per 100 bu., loading after machines \$1.50 per 100 bu., drivers, tracklayers, etc., \$5 per day, common inside labor \$4.15, and outside labor \$3. Then there is what is known as the old Rainey scale, adopted by W. J. Rainey, Inc., July 1, 1921, under which the same classes of work are paid respectively \$2.06, \$1.48, \$4.50, \$3.75 and \$3.

Then there is the new Rainey scale, adopted by Rainey Aug. 19, 1921, under which the prices are \$2, \$1.40, \$3.80, \$3 and \$2.55. The Frick scale is paid by the Frick company, and now by the Whyel interests (including the Consolidated Coke Co., Superior Coal Co. and some other small operations) and also by the Reliance Coke Co. and a few small independent companies. The old Rainey scale is paid by most of the independent companies except Rainey and the new Rainey scale is paid only by the Rainey company, and all their men are on strike except at one small operation. The striking Rainey employees are continually trying to march to other operations in the district to induce the men to stop work and it is having some effect, though the sheriff and state police are preserving very good order.

On Friday Sept. 2, the employees of the Brier Hill Coke Co., where the old Rainey scale is being paid, struck and demanded the Frick scale, but they started to return to work without any change on Monday, Sept. 5, and by Wednesday they were all back at work and so continue. On the day the Brier Hill men struck, Sept. 2, the Whyel interests posted notices at all their plants except Superior that they would advance wages from the old Rainey scale to the Frick scale, and closed down Superior.

MANY WORKERS STRIKE FOR THE FRICK SCALE

The Warwick mine of the Diamond Coal & Coke Co., up the Monongahela River, a new mine being developed, also is on strike. This mine being in the early stages of development work, all men were being paid by the day; but on Wednesday, Aug. 31, they demanded payment by the car for mining and next day went on strike and are still out.

On Wednesday, Sept. 7, the men at the Republic Iron & Steel Co. coal and coke plant at Republic struck for the Frick scale instead of the old Rainey scale, which the company was paying. They were still out the next day and this plant has been indefinitely shut down. On the same day the men at the Martin plant of the American Coke Corporation struck for the same wage, and this plant has been closed down. The next day the men at the Orient and Linn plants of the same company struck for the same concession and these plants are still idle. On Tuesday morning, Sept. 6, some of the strikers from the Mt. Braddock plant of the Rainey company marched to the plant of the Evans Coal & Coke Co., a small operation near by, and induced these men to strike for the Frick scale. On the same day the Superior Coal Co. resumed operations in full on the Frick scale.

On Sept. 8 the Redstone Coal & Coke Co., a subsidiary of the Weirton Steel Co., operating Thompson No. 1 coal and coke plant near Republic, where the old Rainey scale has been in effect, posted a notice advancing wages to the Frick scale.

The Reliance Coke Co., another subsidiary of the Weirton Steel Co. operating at Denbo, a short distance up the river

from Brownsville, has not gone below the Frick scale, probably due to its proximity to the H. C. Frick Coke Co. Bridgeport mine and the further fact that it lies between two union mines operated by the Vesta Coal Co.

Food Prices Increase 1 to 8 Per Cent Between July 15 and August 15

THE U. S. Department of Labor, through the Bureau of Labor Statistics, has completed compilations showing changes in the retail cost of food in August in fifteen principal cities of the United States. During the month from July 15 to Aug. 15, 1921, there was an increase in all of these cities. In Rochester there was an increase of 8 per cent; in Buffalo, 7 per cent; in Baltimore and New York, 6 per cent; in Milwaukee, Newark and Norfolk, 5 per cent; in Charleston, S. C.; Louisville, Manchester and Portland, Me., 4 per cent; in Houston, 3 per cent; in Butte and Dallas, 2 per cent, and in Minneapolis, 1 per cent.

For the year period Aug. 15, 1920, to Aug. 15, 1921, there was a decrease of 30 per cent in Butte; 28 per cent in Louisville; 26 per cent in Baltimore, Charleston, S. C., Dallas, Milwaukee and Minneapolis; 25 per cent in Buffalo, Manchester and Norfolk; 24 per cent in Houston, Newark, Portland, Me., and Rochester, and 22 per cent in New York.

As compared with the average cost in the year 1913, the retail cost of food on Aug. 15, 1921, showed an increase of 62 per cent in Manchester, 60 per cent in Buffalo and Milwaukee, 59 per cent in New York, 58 per cent in Baltimore and Charleston, S. C.; 50 per cent in Minneapolis and Newark, 47 per cent in Dallas and 43 per cent in Louisville.

Lewis Denies Wage Cut Asked by Northern West Virginia Operators

HAVING made no progress in effecting a modification of the existing wage scale in their negotiations with C. F. Keeney, president of District 17, the Northern West Virginia Coal Operators' Association through its advisory board made another effort in that direction on Sept. 7 by submitting their case direct to John L. Lewis, president of the international organization. The conference with Lewis was no more satisfactory than that with Keeney, the advisory board being told point blank that there would be no reduction in miners' wages, because it would disrupt the entire industry. Among other things Lewis told the West Virginia committee that all unionized fields were suffering either from freight differentials or non-union competition.

IN THE TAX REVISION DEBATE in the House Representative Oldfield, of Arkansas, advocated a 20-per cent tax on stock dividends, but the House took no action in the matter. Mr. Oldfield read a list of corporations which had declared dividends in the last two years, which he said had been furnished him by the Treasury Department, and which included the following: The Burnrite Coal Briquette Co., D., L. & W. Coal Co., Texas Pacific Coal & Oil Co., Virginia Iron, Coal & Coke Co., Lig.-Mar. Coal Mining Co., and United Fuel & Gas Co. As the House only had time, under its special rule, for committee amendments, Representative Keller, of Minnesota, had no opportunity to present his land-tax amendment. He urged the tax, however, in a speech in the general debate on the bill, saying the high price of fuel was one of the chief items in the cost of railroads and that coal was high because a few monopolies hold great areas of undeveloped coal fields and by keeping down production maintain high prices. Taxation of land values would force the mining of these coal fields and cheapen the cost of fuel and railroad rates.

THE GEOLOGICAL SURVEY reports that the so-called anthracite of Virginia is not really anthracite but is a much softer coal.

Tidewater Coal Exchange, Inc., to Dissolve

AT A MEETING of the members of the Tidewater Coal Exchange, Inc., held in New York City Friday, Sept. 9, a resolution was adopted to dissolve the exchange and the executive committee was authorized to appoint a trustee. The meeting was attended by about twenty-five members of the exchange, and although no official statement was issued, it was learned that the above action was taken. It also was learned that Gibbs L. Baker, counsel for the exchange, was authorized to take whatever action was necessary to proceed on the bonds of the various transshippers for the payment of any demurrage charges or debits in the pool.

It was said that objection to the dissolution of the exchange was made by representatives of the railroads present at the meeting and that some plan might be decided upon for a continuance of the organization. The chief bone of contention appears to be in the matter of demurrage. Some coal men believe that with this eliminated the exchange could be operated successfully. An official statement was promised some time this week.

National Safety Council Will Convene in Boston State House, Sept. 26 to 30

ABIG coal and metals program has been prepared by B. F. Tillson, chairman of the section, and D. E. A. Charlton, chairman of the program committee for the National Safety Council meeting in the State House at Boston, Sept. 26 to 30. Safety in underground transport will be discussed by several authorities. As regards storage-battery locomotives, Charles E. Stuart, consulting engineer, of New York City, and E. V. Davellar and R. E. Renz, of the Butte & Superior Mining Co., Butte, Mont., will address the meeting. Trolley-locomotive accidents will be discussed by F. W. Whiteside, chief engineer, Victor-American Fuel Co., Denver, Col. The dangers connected with animal haulage will be discussed by E. L. Solomon, of the Kingston Coal Co., Kingston, Pa. Rope haulage will fall into the hands of R. M. Magraw, general superintendent, United States Fuel Co., Hiawatha, Utah. Block-signal and dispatching systems are allotted to R. T. Murrill, safety engineer, Inspiration Consolidated Copper Co., Miami, Ariz., and compressed-air haulage to Guy J. Johnson, safety engineer, Homestake Mining Co., Lead, S. D.

Another subject that will be discussed is mine-fire prevention and fire fighting. Joseph W. Reed, safety engineer, Consolidation Coal Co., will speak for the bituminous mines; G. M. Gillette, of the same company, will relate "Experiences in a Coal-Mine Fire," illustrating it with slides, and H. M. Wolfin, formerly of the U. S. Bureau of Mines and now at the head of the California Industrial Commission, San Francisco, Cal., will present an instance of the use of carbon dioxide in a metal-mine fire.

A symposium on maintaining interest in safety will occupy a third session; W. H. Moulton, superintendent, and William Connibeer, safety engineer, Cleveland-Cliffs Iron Co., Ishpeming, Mich., will show how to sell safety properly and irrevocably to executives. Thomas Copperswaite, safety engineer, Calumet & Arizona Mining Co., Bisbee, Ariz., will inform the assembly as to the manner in which to make firemen and shift bosses root for safety, and J. T. Bradley, safety engineer, W. J. Rainey, Inc., of Uniontown, Pa., will show how to inoculate the miner with similar enthusiasm. G. L. Colburn, mining engineer, U. S. Bureau of Mines, and safety engineer, National Safety Council, will enlighten the session with an account of his observations in various coal and metal camps of the United States.

The final sitting on Friday morning, Sept. 30, will cover a paper on "First-Aid Stations Underground," by R. R. Sayers, chief surgeon, Bureau of Mines, Washington, D. C.; another on "Provision for Drinking Water," by B. C. Yates, superintendent, Homestake Mining Co., Lead, S. D., and "Traveling Ways and Signs," by R. H. Seip, safety engineer, New Jersey Zinc Co., Franklin, N. J.

A report will be made by the Committee on Standardization and Major M. J. Shields, of the Red Cross, will present

a report on first-aid methods and contests, including lists of qualified judges.

The Mining Section's first meeting will be held on Tuesday but on Monday an annual meeting of members will be held, at which business of interest to all members will be transacted. The treasurer's annual report shows that last year's revenues were \$284,337.35.

Urges Organization of Coal Transportation Companies Under Shipping Board

ORGANIZATION of commodity transportation companies under the Shipping Board similar to corporations under the Webb Act for extension of foreign and domestic commerce in coal and other commodities is recommended by a railroad man, whose name is withheld, in a letter to Senator Jones of Washington, chairman of the Senate Committee on Commerce, which has been forwarded to the Shipping Board for consideration. The letter specifically recommends the creation of such a company to take control over all of the major export and import sea-borne groups of commodities such as coal, and the co-ordination of these groups into a general commodity transportation company with representatives from the Shipping Board, the individual transportation companies, the Interstate Commerce Commission, American steamship and railroad lines and the Department of Commerce.

Senate Committee Resumes Mingo Inquiry

THE sub-committee of the Senate Committee on Education and Labor planned to meet at Washington Wednesday, Sept. 14, to take up the West Virginia coal situation, into which it inquired last July. The committee will see the President to be informed as to latest developments following the sending of the army into the region, after which it is expected the committee will take testimony at Huntington, W. Va., in the first of a series of hearings to seek remedies for the mine disorders which have existed for more than a year. The West Virginia hearings probably will begin Sept. 19.

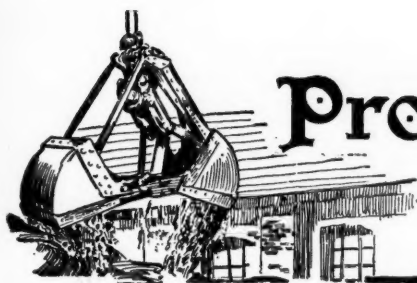
Former Judge Van Fleet of Indiana Named To Federal Trade Commission

PRESIDENT HARDING has chosen J. W. Van Fleet, of South Bend, Ind., as a member of the Federal Trade Commission to succeed John G. Pollard, of Richmond, Va., whose term expires on Sept. 25. Mr. Van Fleet, who is said to have the backing of Senator Watson, is a former circuit judge, a Republican county chairman and was state manager for Mr. Harding during the Presidential campaign.

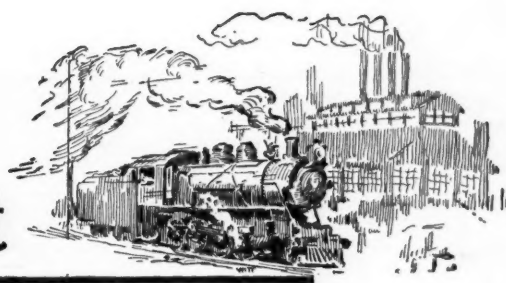
ERSKINE RAMSEY, OF BIRMINGHAM, prominent in the Alabama coal mining industry, attended the Wilkes-Barre meeting of the American Institute of Mining and Metallurgical Engineers and paid a business visit to Washington. Mr. Ramsey is chairman of the financial committee of the Birmingham organization which is staging an elaborate semi-centennial celebration to take place Oct. 24-29. President Harding will attend Oct. 26. A feature of the celebration will be a pageant, a part of which will be an allegorical depiction of the development of the coal industry in Alabama.

W. R. COYLE, president of the American Wholesale Coal Association, has appointed the following committee to investigate and report on the matter of classification of coal and the possibility of the establishment of standards: Messrs. Corey, Taylor, Evans and Cushing. Mr. Coyle also has appointed a legal committee to consist of L. S. Evans, John J. Sheehan and W. R. Coyle. The new budget committee of the association is to be composed of C. L. Dering, G. H. Merryweather and H. J. Heywood.

AN EFFORT WILL BE MADE by the Navy Department to curtail by one-half the amount of fuel it will use during the current fiscal year, as compared with the fiscal year ended June 30.



Production and the Market



Weekly Review

NO IMPETUS, such as a month ago it was surely thought that September would bring the coal trade, has yet been recorded in either production or prices. Optimism tempered by past disappointments has brought the sellers of coal to a state of mind where they accept the inevitable present as a necessary condition and refuse to enthuse over the certain signs of improvement in the general situation. Production of pig iron touched bottom in August and is now on the upgrade, although yet far below the lowest point of 1914. The total output in August, according to the *Iron Age*, was less than a million tons, but yet nearly 100,000 tons above July. Railroad consumption of coal is gaining slowly and although buying for fuel is now taking more tonnage than in August, the financial condition of the railroads is not yet such as would permit of their acquiring normal stocks.

None of the reports from the market centers or the coal fields this week conveys intimation of a fall rush for coal. In the Middle West and beyond the demand from retailers for domestic sizes is about the only business that is being done. The rush on Lake coal is over and sales for export have practically ceased. So great is the available supply over present demand in the Eastern fields that each slight spurt in buying calls forth such a tonnage in offerings that spot prices record no permanent gain.

EXPECT INCREASE IN INDUSTRIAL BUYING POWER

Coal Age Index of spot prices on Sept. 13 was 91—unchanged from the week before. In many of the markets quotations are purely nominal and represent asking prices, so infrequent are spot sales.

The most hopeful signs indicating better business in the offing are the expected increase in purchasing power in the South because of the increase in cotton prices and the probable gain in purchasing power by the Northern and Western farmers because of the better market at

home and abroad for their wheat. The stress laid on the program for helping the railroads by the administration in Washington beyond doubt will have a belated effect on the sale of coal.

All things considered, it is apparent that quite several weeks must elapse before requirements of the country for coal will increase sufficiently to have any effect on current prices. Anthracite production and the sales of domestic sizes are going ahead steadily, in accordance with the normal autumn demand, although the movement beyond retail dealers needs a stimulus that the advertising campaign of the anthracite operators is expected to furnish.

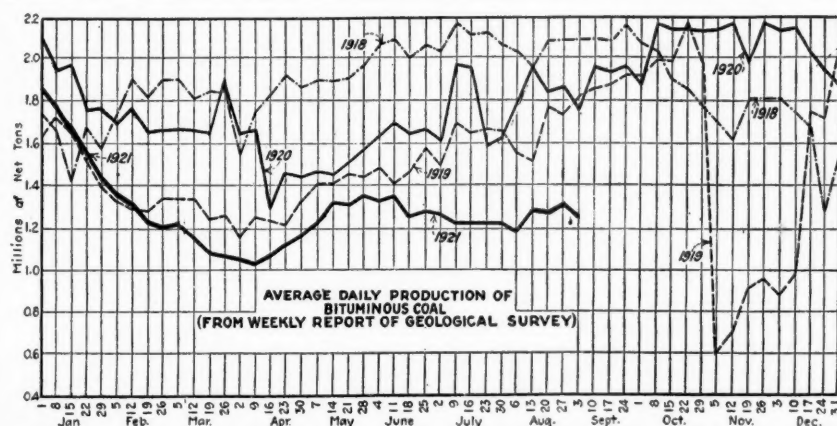
BITUMINOUS

Production of soft coal declined slightly during the week ended Sept. 3. The total output was 7,571,000 net tons, according to the Geological Survey, a decrease of nearly 200,000 tons from the week preceding. Labor disturbances in West Virginia and the declining movement of Lake coal were the main factors in the decrease. The output for the week ended Sept. 10 was cut into sharply by the Labor Day holiday, as indicated by the total loadings for the first two days of that week, which were but 31,350 cars, as compared with 52,289 during the corresponding period of the week preceding.

August production was 34,538,000 net tons less than the output of any corresponding month in the last nine years. The cumulative production to Aug. 31 is 261,000,000 tons, which also is less than the output during the first eight months of any of the last nine years. Compared with the average of the eight years preceding, 1921 is 62,000 tons in arrears and is steadily falling further behind.

The all-rail movement to New England during the first week of September was 2,580 cars, as compared with 2,670 in the preceding week. Prices in that section are under the pressure of shippers to move coal, particularly via Hampton Roads. The smokeless shippers are still favored by the low range of marine freights and there is only a very scattering demand for the Pennsylvania coals all-rail.

In the Middle West, where bituminous coal is sold for domestic purposes, the demand for lump has grown so



Estimates of Production (NET TONS)

BITUMINOUS COAL

Week Ended	1921	1920
Aug. 20(b)	7,708,000	11,039,000
Aug. 27(b)	7,763,000	11,383,000
Sept. 3(a)	7,571,000	11,167,000
Daily average	1,262,000	1,861,000
Calendar year	264,647,000	343,396,000
Daily average, calendar year	1,272,000	1,699,000

ANTHRACITE

Aug. 20(b)	1,529,000	1,640,000
Aug. 27(b)	1,893,000	1,868,000
Sept. 3(a)	1,790,000	1,114,000
Calendar year	59,276,000	58,827,000

BEEHIVE COKE

Aug. 27(b)	57,000	419,000
Sept. 3(a)	58,000	396,000
Calendar year	3,839,000	14,452,000

(a) Subject to revision. (b) Revised from last report.

heavy that many mines are at least two weeks behind in filling orders. Screenings are in heavy oversupply and have been softening rapidly.

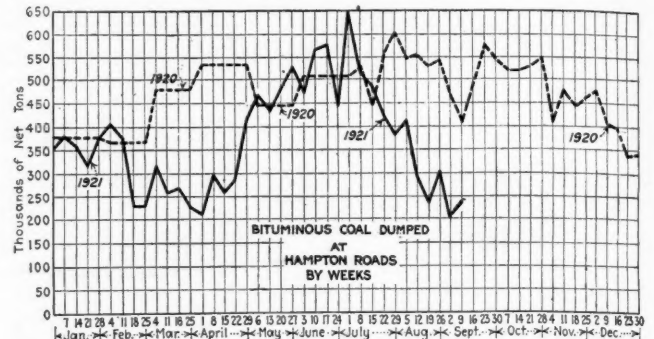
Lake shipments are dwindling rapidly. Dumpings during the week ended Sept. 10 were 451,595 net tons—430,415 cargo and 21,180 vessel fuel—and while the interior markets served by the Head-of-the-Lake docks are taking more coal, the volume so shipped is not sufficient to provide dock storage space for the tonnage which has been going up the Lakes weekly. Total Lake dumpings for the season are 17,190,948 net tons, as compared with 12,918,876 tons for the same period in 1920.

RECEIPTS OF COAL AT DULUTH-SUPERIOR HARBOR DURING THE SEASON OF 1921

	Hard	Soft	Total
May.....	173,190	1,548,880	1,722,070
June.....	192,830	2,125,453	2,318,283
July.....	339,383	1,650,629	1,990,012
August.....	418,238	1,068,555	1,486,793
Total to Aug. 31, 1921.....	1,206,699	6,513,729	7,720,428
Corresponding period, 1920.....	919,488	3,079,418	3,998,846
Corresponding period, 1919.....	767,818	5,142,156	5,909,974
Corresponding period, 1918.....	754,405	4,510,656	5,265,081

Unionized fields adjacent to the Connellsville region are still feeling the competitive effects of the recent non-union wage reduction, although as yet nothing has come of any move to drop the union wages proportionately. While the Pittsburgh operators are not disposed to discuss matters

of policy publicly, the opinion of outside observers is that they have concluded that they can obtain a more substantial reduction in the wage scale by allowing the matter to rest until time for the regular biennial settlement than by attempting to make a reduction at this time and another for the new scale to become effective April 1, 1922.



Foreign markets are at a standstill and the movement of soft coal to Tide fell off sharply during August. Total dumpings for foreign account at Hampton Roads during the first week in September were 85,649 net tons, as compared with 83,628 tons in the last week of August. Dumpings at Hampton Roads during the week ended Sept. 8 for

Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F. O. B. Mines

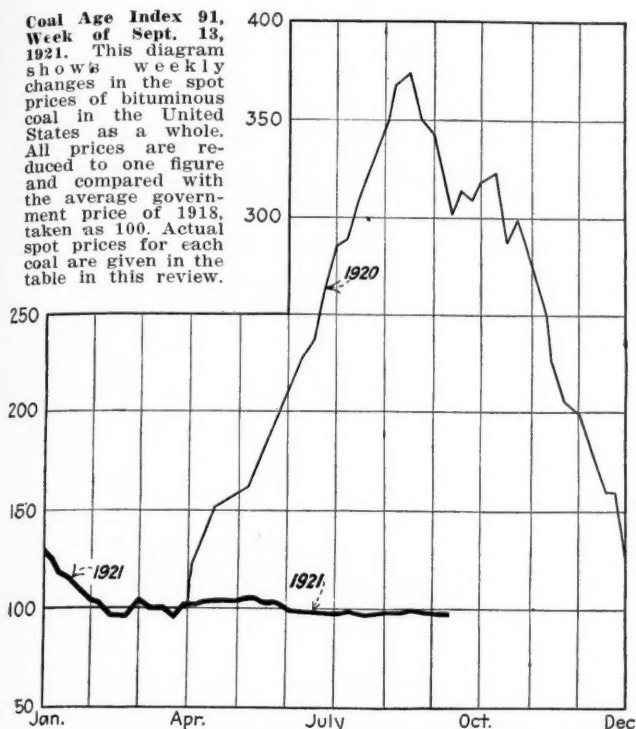
Low-Volatile, Eastern					Market Quoted				
	Aug. 9, 1921	Aug. 30, 1921	Sept. 6, 1921	Sept. 13, 1921		Aug. 9, 1921	Aug. 30, 1921	Sept. 6, 1921	Sept. 13, 1921
Pocahontas lump.....	\$5 15	\$5 30	\$5 35	\$5 00@5.40	Pitts. No. 8 mine run.....	\$2.30	\$2.30	\$2.30	\$2.15@2.35
Pocahontas mine run.....	2.90	3.15	3.15	3.00@3.35	Pitts. No. 8 screenings.....	1.80	1.70	1.65	1.55@1.65
Pocahontas screenings.....	2.15	2.40	2.30	2.25@2.60	Midwest				
Pocahontas lump.....	5.00	5.00	5.15	4.65@5.25	Franklin, Ill. lump.....	3.55	3.65	3.65	3.25@4.05
Pocahontas mine run.....	2.75	2.75	2.50	2.65@3.50	Franklin, Ill. mine run.....	3.15	2.90	2.95	2.40@3.50
*Smokeless mine run.....	5.60	5.15	5.15	4.80@5.15	Franklin, Ill. screenings.....	1.85	1.95	1.85	1.25@2.65
Clearfield mine run.....	1.90	1.80	1.95	1.65@2.20	Central, Ill. lump.....	2.75	2.70	2.70	2.40@3.00
Cambria mine run.....	2.55	2.45	2.40	2.00@2.65	Central, Ill. mine run.....	2.20	2.40	2.40	2.00@2.75
Somerset mine run.....	1.70	1.70	1.75	1.45@2.00	Central, Ill. screenings.....	1.60	1.75	1.75	1.05@2.25
Pool 1 (Navy Standard).....	3.15	3.25	3.25	3.00@3.75	Ind. 4th Vein lump.....	3.60	2.95	2.95	2.35@3.50
Pool 1 (Navy Standard).....	2.95	2.95	2.95	2.85@3.00	Ind. 4th Vein mine run.....	3.10	2.50	2.55	2.35@2.75
Pool 1 (Navy Standard).....	2.45	2.50	2.50	2.75@3.00	Ind. 4th Vein screenings.....	2.15	1.70	1.70	1.25@2.15
Pool 9 (Super. Low Vol.).....	2.55	2.50	2.45	2.40@2.75	Ind. 5th Vein lump.....	2.90	2.90	2.90	2.50@3.25
Pool 9 (Super. Low Vol.).....	2.35	2.35	2.35	2.25@2.40	Ind. 5th Vein mine run.....	2.45	2.40	2.50	2.25@2.75
Pool 9 (Super. Low Vol.).....	2.20	2.25	2.20	2.45@2.50	Ind. 5th Vein screenings.....	1.65	1.75	1.75	1.35@2.15
Pool 10 (H. Gr. Low Vol.).....	2.35	2.15	2.20	2.10@2.50	Standard lump.....	2.20	2.45	2.50	2.25@3.00
Pool 10 (H. Gr. Low Vol.).....	2.05	2.05	2.05	1.90@2.15	Standard mine run.....	1.75	1.85	1.85	1.85@2.00
Pool 10 (H. Gr. Low Vol.).....	2.00	2.00	2.00	2.15@2.25	Standard screenings.....	1.15	0.95	0.85	0.65@0.85
Pool 11 (Low Vol.).....	1.95	1.90	2.05	1.90@2.35	West Ky. lump.....	3.00	3.10	3.05	2.25@3.25
Pool 11 (Low Vol.).....	1.75	1.80	1.80	1.75@1.90	West Ky. mine run.....	2.25	2.45	2.35	2.25
Pool 11 (Low Vol.).....	1.70	1.80	1.80	2.00	West Ky. screenings.....	1.70	1.50	1.25	1.30
High-Volatile, Eastern					South and Southwest				
Pool 54-64 (Gas and St.).....	1.85	1.90	1.80	1.75@2.00	Big Seam lump.....	3.75	3.75	3.85	3.25@4.25
Pool 54-64 (Gas and St.).....	1.65	1.70	1.70	1.60@1.75	Big Seam mine run.....	2.15	2.10	2.15	2.00@2.25
Pool 54-64 (Gas and St.).....	1.50	1.60	1.60	1.50@1.85	Big Seam (washed).....	2.40	2.35	2.40	2.25@2.50
Pittsburgh se'd gas.....	2.70	2.65	2.65	2.55@2.75	S. E. Ky. lump.....	3.60	3.65	3.50	3.25@3.75
Pittsburgh mine run (St.).....	2.10	2.25	2.25	2.20@2.30	S. E. Ky. mine run.....	2.30	2.30	2.35	2.00@2.25
Pittsburgh slack (Gas).....	1.70	1.70	1.70	1.65@1.75	S. E. Ky. screenings.....	1.65	1.55	1.55	1.40@1.60
Kanawha lump.....	3.25	3.50	3.45	3.25@3.65	Kansas lump.....	5.50	.....	.....	5.75
Kanawha mine run.....	2.15	2.15	2.15	2.00@2.25	Kansas mine run.....	4.40	.....	.....	4.25
Kanawha screenings.....	1.50	1.30	1.30	1.20@1.40	Kansas screenings.....	3.25	.....	.....	2.50
Hocking lump.....	3.15	3.20	3.20	3.00@3.35	*Gross tons, f.o.b. vessel, Hampton Roads.				
Hocking mine run.....	2.15	2.15	2.15	2.00@2.25	†Advances over previous week shown in heavy type, declines in italics.				
Hocking screenings.....	1.50	1.35	1.30	1.15@1.35					
Pitts. No. 8 lump.....	3.25	3.25	3.25	3.00@3.50					

Current Quotations—Spot Prices, Anthracite—Gross Tons, F. O. B. Mines

		Aug. 30, 1921		Sept. 6, 1921		Sept. 13, 1921	
Market Quoted		Independent	Company	Independent	Company	Independent	Company
Broken.....	New York.....	\$2.61	\$7.50@8.20	\$7.50@7.75	\$7.60@7.75	\$7.60@8.20	\$7.60@7.75
Broken.....	Philadelphia.....	2.66	7.50@8.20	7.65@7.85	7.75@7.85	7.60@8.20	7.75@7.85
*Broken.....	Chicago.....	5.62	12.75	12.65	12.75	12.75	12.65
Egg.....	New York.....	2.61	7.60@7.75	7.50@7.75	7.75@8.15	7.75@8.25	7.60@7.75
Egg.....	Philadelphia.....	2.66	7.60@8.20	7.60@7.85	8.10@8.35	8.10@8.35	7.75@7.85
*Egg.....	Chicago.....	5.62	12.80	12.65	12.80	12.80	12.65
Stove.....	New York.....	2.61	7.80@8.50	7.80@8.10	8.25@8.50	8.25@8.50	7.90@8.10
Stove.....	Philadelphia.....	2.66	8.00@8.35	7.95@8.25	8.25@8.60	8.25@8.60	8.00@8.35
*Stove.....	Chicago.....	5.62	13.40	12.90	13.40	13.40	12.90
Chestnut.....	New York.....	2.61	7.60@8.00	7.80@8.10	7.75@8.15	7.75@8.25	7.90@8.10
Chestnut.....	Philadelphia.....	2.66	7.75@8.00	7.95@8.25	8.20@8.75	8.20@8.75	8.00@8.25
*Chestnut.....	Chicago.....	5.62	13.10	12.90	13.10	13.10	12.90
Pea.....	New York.....	2.47	4.50@5.75	6.05@6.45	5.00@5.35	6.05@6.45	6.05@6.45
Pea.....	Philadelphia.....	2.38	4.50@5.50	6.10@6.40	4.50@5.50	6.15@6.25	6.15@6.25
*Pea.....	Chicago.....	5.62	11.10	11.00	11.10	11.10	11.00
Buckwheat No. 1.....	New York.....	2.47	3.00@3.50	3.50	2.75@3.50	3.50	3.00@3.50
Buckwheat No. 1.....	Philadelphia.....	2.38	2.50@3.00	3.50	2.50@3.00	3.50	2.50@3.00
Rice.....	New York.....	2.47	2.00@2.50	2.50	1.75@2.50	2.50	2.00@2.50
Rice.....	Philadelphia.....	2.38	1.75@2.00	2.50	1.75@2.00	2.50	1.75@2.00
Barley.....	New York.....	2.47	1.25@1.50	1.50	1.10@1.50	1.50	1.25@1.50
Barley.....	Philadelphia.....	2.38	1.00@1.25	1.50	1.00@1.25	1.50	1.00@1.25
Birdseye.....	New York.....	2.47	.....	2.50	.....	2.50	.....

*Prices and freight rates, net tons; quotations f.o.b. cars, Chicago.
†Advances over previous week shown in heavy type, declines in italics.

Coal Age Index 91, Week of Sept. 13, 1921. This diagram shows weekly changes in the spot prices of bituminous coal in the United States as a whole. All prices are reduced to one figure and compared with the average government price of 1913, taken as 100. Actual spot prices for each coal are given in the table in this review.



all accounts were 216,740 gross tons, an increase of 33,000 tons over the preceding week, accounted for by the tonnage which is being urged on New England and the desire of shippers to clear up Tidewater accumulations on demurrage.

TIDEWATER BITUMINOUS COAL SHIPMENTS FOR AUGUST, 1921

Destination	(In net tons)					Totals
	New York	Philadelphia	Baltimore	Hampton Roads	Charleston	
Coastwise to New England.....	117,000	49,000	82,000	650,000	.....	898,000
Exports.....	81,000	82,000	252,000	23,000	438,000	.....
Bunker.....	313,000	51,000	30,000	280,000	1,000	675,000
Inside capes.....	.....	157,000	91,000	21,000	.....	269,000
Other tonnage.....	563,000	.....	.....	58,000	.....	621,000
Totals.....	993,000	338,000	285,000	1,261,000	24,000	2,902,000

Foreign Market And Export News

Coal Paragraphs From Foreign Lands

HOLLAND—Cable advices to *Coal Age* are that American gas is unchanged in Rotterdam at \$7 and British steam coal is quoted at 32s., as compared with last week's figure of 38s.

SWEDEN—Stocks of coal in Stockholm are low, and according to *Commerce Reports*, and if competitive prices and quick deliveries are made there is a prospect of considerable business. A list of Swedish coal importers is on file in the Bureau, File-Eur—12013.

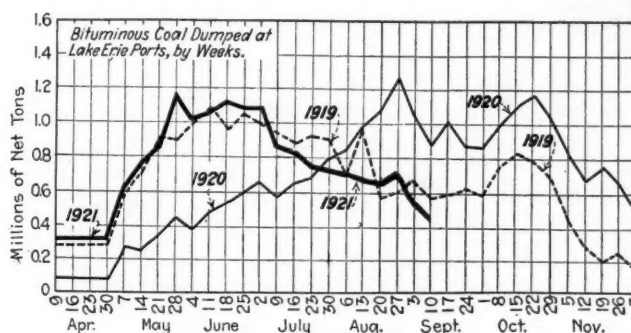
BELGIUM—Demand for industrial coal is low and large stocks are accumulating. However, domestic call is strong and mines are unable to fill all orders. Following the wage decline, prices show reductions of 2 to 4 francs per ton.

Belgian production in June was 1,700,480 tons as against 1,592,420 in May, and a monthly average of 1,903,460 tons in 1913. Stocks at the end of

June amounted to 561,320 tons, as against 776,830 tons at the end of May. Production of coke was 109,950 tons, against 122,250 tons in May; and that of briquets 237,390 tons, against 214,420 tons.

SPAIN—Arrivals of British supplies on the Spanish market have depressed the demand for Asturian coal and prices are weaker, with the exception of screened, which is quoted at 125 pesetas. Cobbles are 110 pesetas and smalls are 75@85 pesetas. The labor situation is still uncertain but at several mines the men have accepted a wage reduction and have returned to work.

In view of the derogatory statements regarding American coal for use on Spanish railways, *Commerce Reports* states that letters from officials of the three largest railways in Spain advise to the effect that American coal used was of good quality and conformed to specifications.



ANTHRACITE

Production of hard coal fell off during the week ended Sept. 3, being estimated by the Geological Survey at 1,790,000 net tons, compared with 1,893,000 during the preceding week. Western stocks of anthracite are heavy but dealers apparently feel that hard coal cannot go lower and are keeping their yards full, taking advantage of the lower-priced independent tonnage which is occasionally being offered. In the East the normal demand for this time of the year is being experienced although there is a tendency to cut down seasonal household requirements, due, no doubt, to a desire to economize.

Anthracite loadings at Buffalo for shipment up the Lakes continue fairly active. August receipts at Duluth-Superior harbor increased 79,000 tons over those for July. The total receipts for the season to Aug. 31 were 1,206,699 tons, more than in the corresponding period in any of the last three years. New England anthracite receipts for the week ended Sept. 3 were 2,479 cars, or at the same rate as during the preceding week.

COKE

Beehive coke production continues at a weekly rate just below 60,000 tons and conditions in the industry remain unchanged. The total output during the first week of September was 58,000 net tons, an increase of 1,000 tons when compared with the preceding week. Producers are feeling the strong competition of byproduct coke but are proceeding cautiously and obtaining a few good orders, at the same time refusing to shade prices further.

Continued Decline in Hampton Roads Exports; Less Tonnage at Tide

The export business continues to decline. Only six cargoes for foreign ports cleared last week, the C. & O. piers at Newport News clearing none.

Prices remain approximately the same but are even shaded at times. There is no difference between bunker and cargo prices, except in specific instances. The coastwise trade is holding its own, and the bunker business is still brisk.

Approximately 216,000 gross tons were dumped during the week ended Sept. 8. Tonnage at Tide is dwindling, operators being reluctant to accumulate demurrage. At the end of this week vessel tonnage at port awaiting cargo amounted to only 10,000.

PIER SITUATION

	Week Ended	
	Sept. 1	Sept. 8
N. & W. Piers, Lambert's Point:		
Cars on hand.....	2,105	1,761
Tons on hand.....	115,449	92,405
Tons dumped during week.....	72,802	95,864
Tonnage waiting.....	11,350	4,000
Virginian Ry. Piers, Sewall's Point:		
Cars on hand.....	1,776	1,640
Tons on hand.....	104,200	82,000
Tons dumped during week.....	73,202	74,125
Tonnage waiting.....	6,000	2,769
C. & O. Piers, Newport News:		
Cars on hand.....	2,181	2,116
Tons on hand.....	109,050	105,800
Tons dumped during week.....	37,086	46,751
Tonnage waiting.....	9,000	3,300

Foreign Coal Markets Are Oversupplied

British Home Market Glut Makes Export Outlet
Imperative—French Production Gains Rapidly—
Lower Quotations Appear but Fail to Bring Orders

Production in the United Kingdom for the week ended Aug. 27 was 4,102,300 gross tons, according to cable advices to *Coal Age*. The market is lifeless and producers are experiencing difficulty in disposing of the output. Britain's home trade is showing the effects of heavy stocks, which have been accumulated and also of curtailment in fuel consumption.

It is quite natural that strenuous efforts are being made to use the export market as an outlet for this production in excess of consumption, as evidenced by the fact that August coal exports from the United Kingdom amounted to 3,103,000 tons. In July they were 816,000 tons, although of course they were somewhat hampered in that period by the strike, which ended July 2. During the strike months of April, May, June and also in July, the United Kingdom imported 1,486,180 tons of American coal, of which 1,005,144 went to England, 406,640 to Ireland and 74,396 to Scotland.

Eastern markets are said to show signs of life, and the hardening of the rupee exchange has been welcomed as a sign of confidence, caused by the fact that Indian native merchants were beginning to pay the debts on which they had defaulted during the great break in values.

The depression in the coal trade is attributed in part to the stocks of foreign coal, which were in hand or on order when the strike ended. At that time some 500,000 tons were in hand on Government account. Having no storage, and not wishing to pay high demurrage charges the Government sold at a great sacrifice. Another 500,000 tons was left in private importers' hands at the end of the dispute, and they, too, have had to clear it.

Other coal merchants bought the first coal raised after the strike, paying high prices, expecting a rush to buy. They have been disappointed for the public held off, waiting for prices to fall, and practically no household coal has yet been bought for winter use. When the merchants have cleared off

those stocks prices will fall. Already manufacturers are being offered consignments at greatly reduced prices, and as industry revives the factories must begin to buy steam coal; but the prices are likely to be reduced considerably.

Bunker trade is now reviving, and 20,000 tons were recently exported from South Wales to France. Thus there is a prospect of employment at collieries becoming brisker.

French Production Equals Consumption

The slight improvement of the industrial situation has not so far affected the coal business materially, as available coal is still greatly in excess of demand. It is quite evident that buyers are only covering their most urgent needs in order to have the benefit of an inevitable drop in home-produced coal which is being at present heavily stocked. British coals are still being actively offered at further reductions, but apparently without attracting French buyers.

Much is being written on the possibilities of Saar coal by those who are bent on freeing France from any dependency on foreign coals. It is put forward that production could be enormously increased, in fact to an extent sufficient to enable France to cease buying foreign coals altogether.

The Interallied Financial Conference terminated their work on Aug. 14 and came to an agreement in which it is stipulated "that all coal received from Germany up to Aug. 31, 1922, via Rotterdam and Antwerp, and which as being invoiced at the British export price, will be reckoned on the basis of the German inland price." This is the question of the f.o.b. price which has always caused so much comment all round; its settlement represents to France a saving of 140,000,000 gold marks.

However, the general agreement has yet to be approved by the governments, and the balance of same is far from being satisfactory to France. For instance, what has been arrived at in

regard to Saar coals is flatly repudiated by the French Premier.

French coal production for June, 1921, was 1,762,160 tons. Lignite output was 48,301 tons and the Saar furnished 728,197 tons. In July the total production in France, including the Saar region, was 3,217,632 tons. A cablegram to the Department of Commerce states that French coal mines are increasing their production at a rate considerably higher than expected.

Production of coal in the Ruhr district for the week ended Aug. 27 was 1,787,085 tons according to cable advices to *Coal Age*, as compared with 1,791,579 tons in the week of Aug. 20. Production in Upper Silesia for the month of August was 2,074,132 tons.

Export Clearances, Week Ended Sept. 8

FROM HAMPTON ROADS	
For Atlantic Islands:	Tons
Nor. SS. Bratland, for Curacao.....	2,500
Nor. SS. Gran, for Kingston.....	3,032
For Argentina:	
Br. SS. Shannonmeade.....	6,011
Br. SS. Torrent.....	3,826
For Cuba:	
Am. SS. Callabazas, for Santiago.....	1,364
For Italy:	
It. SS. Belvedere, for Trieste.....	2,817

FROM PHILADELPHIA:	
For Canada:	
Schr. Priscilla Alden, for St. Stephen's.....	
Dan. SS. Bornhold, for St. John's.....	

Pier and Bunker Prices, Gross Tons

(Foreign Bunker Quotations by Cable to Coal Age)			
PIERS			
	Sept. 3	Sept. 10†	
Pool 9, New York...	\$5.75@5.90	\$5.75@5.80	
Pool 10, New York...	5.50@5.65	5.50@5.65	
Pool 9, Philadelphia...	5.80@6.00	5.80@6.00	
Pool 10, Philadelphia...	5.40@5.70	5.40@5.70	
Pool 7, Philadelphia...	6.00@6.25	6.00@6.25	
Pool 1, Hampton Roads...	4.90@5.15	4.80@5.25	
Hampton Roads...	4.50@4.75	4.60	
BUNKERS			
Pool 9, New York...	\$6.20@6.30	\$6.20@6.30	
Pool 10, New York...	5.95@6.05	5.95@6.05	
Pool 9, Philadelphia...	6.10@6.30	6.10@6.30	
Pool 10, Philadelphia...	5.75@6.00	5.75@6.00	
Pool 1 Hampton Roads...	5.10@5.25	5.10@5.25	
Pool 5, 6, 7, Hamp. Rds.	4.65		
Welsh, Gibraltar...	50s. f.o.b.	50s. f.o.b.	
Welsh, Port Said...	64s. f.o.b.	64s. f.o.b.	
Welsh, Singapore...	102s. 6d. f.o.b.	76s. f.o.b.	
Welsh, Rio Janeiro...	75s. f.o.b.	75s. f.o.b.	
Welsh, Algiers...	50s. f.o.b.	50s. f.o.b.	
Welsh, Malta...	60s. f.o.b.	60s. f.o.b.	
Welsh, Lisbon...	57s. 6d. f.o.b.	57s. 6d. f.o.b.	
Welsh, La Plata...	70s. f.o.b.	70s. f.o.b.	
Welsh, Madeira...	57s. 6d. f.a.s.	57s. 6d. f.a.s.	
Welsh, Tenerife...	57s. 6d. f.a.s.	57s. 6d. f.a.s.	
Welsh, Genoa...	58s. t.i.b.	58s. t.i.b.	
Durham, Newcastle...	35s. @37s.	35s. @37s.	
Belgian, Antwerp...	110 fr.	110 fr.	

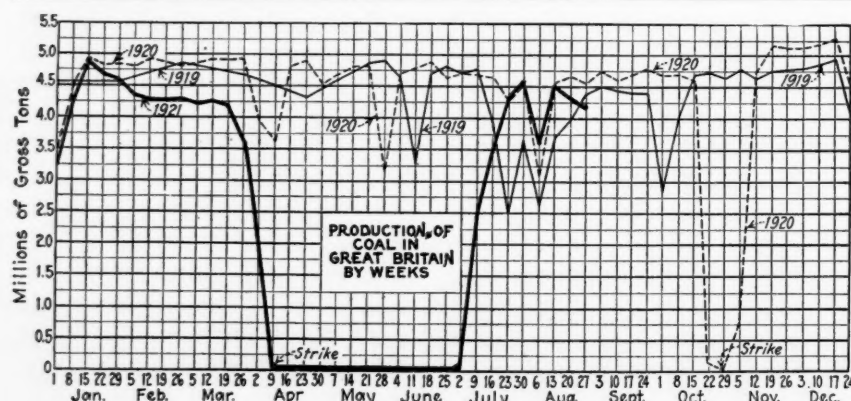
C.I.F. Prices, American Coal

(In Gross Tons)				
	Sept. 3	Sept. 10†		
	Low Vol.	High Vol.	Low Vol.	High Vol.
River Plate.....	\$10.85	\$10.25	\$10.75	\$10.80
French Atlantic.....	9.75	9.25	9.75	9.30
United Kingdom.....	9.75	9.30	9.65	9.30
West Italy.....	10.15	9.65	10.05	9.60
Scandinavia.....	10.30	9.95		
Rotterdam.....				
Cuba.....	7.25	7.00	7.25	6.85

Current Quotations British Coals f.o.b. Port, Gross Tons

	Sept. 3	Sept. 10†
Cardiff		
Admiralty Large.....	33s.	32s. 6d. @33s. 6d.
Steam, Small.....	19s.	18s. 6d. @19s. 6d.
Newcastle:		
Best Steams.....	28s. 9d.	27s. 6d. @30s.
Best Gas.....	28s.	27s. @28s.
Best Bunkers.....	27s. 6d.	28s. @28s.

†Advances over previous week shown in heavy type, declines in italics.



Reports From the Market Centers

New England

BOSTON

Market Saturated—Prices Continue on Low Level—Cheap Coal at Hampton Roads—All-Rail Extremely Dull—Anthracite Domestic Moving More Easily.

Bituminous—Careful canvass of the current market discloses no significant developments. Prices are still under the pressure of shippers to move coal, particularly via Hampton Roads, and what sales are reported are on the lowest basis heard thus far this season. No reaction has as yet set in, so far as we are advised, and in none of the industries is there any likelihood of such an early increase in business that would mean greater fuel consumption than at present. There are instances of oil supplanting coal, but these are now scattered over different parts of New England and seem not so significant as the general shift from coal to oil in the district about Providence, R. I., a few years ago.

Pocahontas and New River shippers are still favored by the range of marine freights, and through a widening belt, widening as prices recede, there is a certain volume of smokeless coal being placed on the spot market from day to day. A price of \$4.80 per gross ton f.o.b. vessel at Norfolk, was freely quoted on Pool 2 last week, and at the rate market cargoes are coming forward it is to be expected that the price level will drop still further, at least until certain accumulations at the Hampton Roads piers are worked off. The quiet state of prepared coal West, along with the weak market on coke and slack, and the lack of any urgent demand either cargo or bunker for off-shore leaves New England one of the very few openings.

For the Pennsylvania coals all-rail there is only a very scattering demand. Prices on the better grades from the central district are not low enough to compete with Pocahontas and New River under present conditions, and there is hesitancy on the part of consumers to buy the medium coals that run rather high in ash and sulphur. Sales agents are keeping in close touch with buyers, but the response so far is slow and faltering.

The daily average of steam coal received through the Hudson River gateways remains extremely low as compared with recent years.

The New York and Philadelphia piers are still suffering from extremely light business. The barge lines that regularly operate from Hampton Roads find it difficult to fit in very much

movement from Philadelphia and are inclined to ask a higher rate to compensate for loss of time and certain charges that are incident to movement on the Delaware. For these and other reasons there is nothing like the movement of Pennsylvania coals from New York and Philadelphia that might be looked for during a period of such low coastwise freights.

Anthracite—The large companies are having much less difficulty moving prepared sizes. Even chestnut is in better demand, and by the end of the month there may easily be a fairly active market. Certain cities in this territory show a better retail demand, and without much doubt this will spread when cooler weather prevails.

Tidewater—East

NEW YORK

Anthracite Situation Continues to Improve—Demand More Evenly Divided—Steam Coals Stronger—Bituminous Market in Better Shape—Stronger Market Indicated.

Anthracite—The situation is gradually improving. With demand on the increase some of the smaller operations on short time or closed are now making preparation for reopening.

The demand from retail dealers, which has been centered on stove, has now spread over egg, stove and chestnut, although not evenly. Locally there is a better call for egg than for chestnut, while from New England and the West the latter size is mostly wanted.

Independent coal is moving easily, some being quoted above company schedules. Pea coal is up, the better grades being held around \$6. Buckwheat is not as strong as rice, while barley is the longest of the three coals.

Bituminous—The trend to improvement continues. Inquiries are increasing and more business is being placed. Some shippers report more business already booked for September delivery than they had during the entire month of August, while the deliveries for October will, it is believed, exceed those for the present month. For future business there is a tendency to stronger quotations.

The demand has been spotty, much depending on how badly the buyer wants the coal and on how much coal the seller has available. One prominent operator who recently made a tour of some of the adjoining states where bituminous is used largely in industrial plants expressed surprise at the small amount of coal in storage. Many of the mines continue to be closed down,

while others are working scarcely half time. Boatmen are looking for business but are holding their prices for harbor work at around 35c.

On Sept. 9 there were reported outside the pools 1,359 cars and 39 cars in the pools.

PHILADELPHIA

Anthracite Demand Eases—Retail Prices Tend Higher—Steam Coals Inactive—Bituminous Unchanged—Market Prices Continue Low—Some Contract Changes.

Anthracite—The weather so far this month has been so unseasonably warm that the pep is out of the late August retail market. Home-coming vacationists have not bought as usual. Retail men are inclined to pass the Sept. 1 general increase in mine price on to the buyer. Some quite sizable retail men are asking \$14 for egg and \$14.25 for stove and nut, although most all still cling to \$11 for pea. An increased price schedule by some of the largest dealers is expected about the 20th of the month.

Shippers report coal moving in better volume and distribution in good shape. Nut and pea are piling up. We recently heard of a distress sale of pea as low as \$4.25, with considerable at \$4.75, and plenty to be had at \$5 to \$5.25. Dealers are taking this coal on as a speculation. Some dealers report better collections.

There is little improvement to record in steam coals, although some interests reported a slightly better demand for barley, while buckwheat and rice remain only in moderate demand.

Bituminous—The market shows no change. We have heard of some big users who have signed agreements for coal sufficient to carry them for the balance of the coal year, and while neither the shipper nor consumer considers this an ordinary contract, yet it amounts to the same thing, with the price 50 per cent lower than so-called contract prices for good coals. More than one shipper has reduced his prices on contracts to meet the spot market.

Spot prices continue at the level of the past six weeks. The trade is somewhat inclined to feel that September will not witness the beginning of the upward climb that has been so much looked forward to.

BALTIMORE

Bituminous Business Tightening—Prices Advance—Anthracite Consumers Hold Back—Hard Coal Movement Far Below Normal.

Bituminous—Whether under the impulse of the general news from over the country that business is picking up or due to the slightly better return of ordering in the local field, the soft-coal business is showing decided signs of tightening. The best grades of steam coal are now going under contract in a way that is sure to tighten still further the situation on the spot market. Pool 1 is now so thoroughly covered that the offerings of this coal in the open market are getting rather scarce.

The result has been that while some has been offering this week at \$2.75 a net ton f.o.b. mines, which in itself is an advance over the week previous, the majority of free No. 1 is now being held at \$3. Pool 9 is quoted around \$2.50; in some cases a little lower and in some a little higher. Lower-grade steam coals for which there is any market run from \$2 to \$2.25. There is practically no demand for either Pool 18 at quotations around \$1.84 or Pool 34 around \$1.50. Best grade Pennsylvania gas lump is selling around \$2.75 mine basis with West Virginia lump at from \$2.25 to \$2.50. Pool 61 is offering here at \$2.25. The export situation is far from brisk.

Anthracite—Continued warm weather and the unshaken belief of the public that lower prices at retail may result from the action of the Grand Jury in Baltimore against retail coal dealers apparently are enough causes to prevent any considerable ordering of coal supplies, despite the fact that cooler weather is almost at hand. During the month of August a total of 721 cars of hard coal were received in the Baltimore district over the Pennsylvania, Baltimore & Ohio and Western Maryland railroads, or about 28,000 tons. This is less than half the normal movement. From April 1 to Sept. 1 the receipts here were actually about 90,000 tons short of the usual 360,000 tons.

BUFFALO

Bituminous Prices Sagging Again—Wages Refuse to Come Down—Anthracite Shipments Lighter.

Bituminous—Shippers do not speak in an encouraging way of the trade, some saying that prices are not as high as they were. The shipper looks at the report of more coal mined with anything but pleasant feelings. He knows that so long as mining jumps up to meet any slight increase of demand it is useless to expect much improvement in prices. As to wages it is not expected that the miners will give up present figures, so that it is likely to be April before anything can be done.

Some of the mining districts usually considered too far away to get into this market are now offering their output here. Latrobe coal sells at a low price, due to cheap mining, but local consumers are not used to it and do not buy it readily. Now and then a shipment of West Virginia coal is offered at a cut price. The tendency is to weaken the market. General bituminous quotations remain at \$3 for Youghiogheny gas lump, \$2.75 for Pittsburgh and No. 8 steam lump, \$2.50 for Allegheny Valley mine run and \$1.75 to \$2 for all slack, adding \$2.36 to Allegheny Valley and \$2.51 to other coals for freight.

Anthracite—The demand increases slowly, but it will take some pretty cool nights to set consumers to buying. Lack of work is going to oblige more people than usual to buy a little at a time, and that, with the idea still prevailing that prices are to decline, will cut down the demand more or less. In many parts of Canada the September

advance in prices has been 40c. to 50c., compared with 10c. here. Independent operators are asking \$8.75 for stove size, which is a full dollar over circular, with few takers.

Lake—The movement from this port has suddenly declined sharply, but that is supposed to be due to the holiday and an accidental slacking off of clearances, loading being about as usual. For the week ending Sept. 7, clearances were 87,500 net tons, of which 49,500 tons were for Duluth and Superior (shipper's option, after sailing), 25,100 tons for Milwaukee and 15,100 tons for Chicago. Freight rates remain at 50c. to Duluth, 60c. to Milwaukee and 65-70c. to Chicago.

Northwest

DULUTH

Lake Receipts Decrease as Shipments Steadily Increase—Supplies for Dealers Expected to Be Plentiful.

It is not expected that September receipts will approximate the 1,106,756 tons of bituminous and 412,305 tons of anthracite received here in August. Receipts for the season have reached 6,529,256 tons of soft coal and 1,198,205 tons of anthracite, a gain for both over last year.

Shipments from the docks are steadily increasing in volume and dock men feel safe in predicting that dealers will all have plentiful supplies on hand by the time cold weather makes the general buying market take a jump.

Two boats arriving for a Duluth dock this week were unable to discharge their cargoes and now are standing alongside waiting for sufficient coal to be moved out to accommodate their loads. Thirty-two cargoes arrived at Duluth-Superior harbor last week, of which seven were anthracite, and it is reported that nine are on the way, one of which is hard coal.

MINNEAPOLIS

Coal Shortage in Northwest Unlikely—Shyness of Steam Users Depresses Demand for Illinois Coal—Retail Business Good.

There has been a general admission in the last few weeks that the chances of any real coal shortage for the Northwest were exceedingly remote. It has been apparent for many weeks that this would be the case, unless there should be a sudden and inexplicable reversal of form. For three months coal has been coming to the docks on Lake Superior in large quantities. For a month or so it has been something of a question at times whether the cargoes could be unloaded, and considerable delay has been caused by the quantities on the docks. The exploitation of the possible coal shortage does not seem to have done the slightest good toward inducing anyone to buy coal earlier.

Aside from the innuendo which will attach to the trade from the shortage

predictions, its members have come through the summer in first-class shape. They have proceeded to handle their business to their own best judgment. They have urged a better distribution of orders, and they have stated that there was no chance of any lower prices on domestic coal—a prediction which has been confirmed up to this time.

Steam users are very backward about taking hold, and this has affected the demand for Illinois coal, which usually is fairly active by this time. Many large users are buying only as they need it, and are still looking for a substantial reduction in prices beyond the figures already made. Retail orders are coming along very well, and retailers are moving out coal as fast as they can do so conveniently.

MILWAUKEE

Demand Improving but Not Sufficiently to Relieve Dock Congestion—Shortage in Anthracite Stove.

Dealers are urging industries to stock up with soft coal in order to relieve the docks and make room for additional supplies. There was a slight flurry the first of the month because of a report that anthracite was to be advanced 40c. to cover a Pennsylvania State tax, but the report was promptly discredited.

As it stands, anthracite was advanced 10c., with the exception of buckwheat. Three dock companies, representing the Philadelphia and Reading, and Lehigh Valley interests, are selling at 10c. under the figures, however, due to the fact that they failed to exact the customary 10c. advance in July.

Receipts by Lake are holding up somewhat better than was predicted. The record for the season at the close of August was as follows:

ANTHRACITE			
	1921	1920	
April.....	43,100	17,500	
May.....	204,246	109,600	
June.....	153,135	138,771	
July.....	124,934	104,690	
August.....	141,071	126,206	
	666,486	496,767	
Increase.....	169,719	.....

BITUMINOUS			
	1921	1920	
April.....	154,583	26,900	
May.....	486,967	136,462	
June.....	492,965	192,573	
July.....	334,453	259,459	
August.....	330,886	401,554	
	1,799,854	1,016,048	
Increase.....	783,806	.....

Inland West

ST. LOUIS

General Conditions show Slight Improvement—Steam Business Still Quiet—Higher Priced Domestic Coals Fail to Move.

The general public as yet has not started buying. Some tonnage of cheaper coals is moving, but the better grades are slow. Dealers are

loading up their yards, anticipating the demand. Several thousand tons of Pennsylvania anthracite are in storage in yards since last spring and it is a question whether it will all move out.

Locally steam is in a bad way. Just enough to keep going on seems to be the idea of the buyer and it is a good one for him, for prices keep slipping down. There are fairly good storage supplies at many plants. Country steam is from bad to worse and in time this business will only be a memory in many sections.

Movements through this gateway are good for Omaha and St. Joseph, and Chicago is coming in now for the larger sizes of cheaper coals. Retail prices are unchanged.

DETROIT

Sales in Both Steam and Domestic Divisions Continue Light—Incoming Shipments Small—Little Free Coal in Sight.

Bituminous—Despite the lateness of the season, wholesalers and jobbers are making slow progress. Consumers of steam coal are still buying on a hand-to-mouth basis.

The disinclination to increase stocks is credited to a desire to watch the progress toward restoration of usual conditions in business and industrial lines. There is also a feeling on the part of the buyers that the present situation makes it desirable to retain all working capital as far as possible in liquid form rather than have it invested in raw material or commodities used in operations but not immediately required.

The domestic division is largely a weather market. Several days of low temperature bring an increase of buying from householders. The buying is in small lots generally.

Anthracite—Only a small volume of business is being done. Dealers have been informed that certain independent producers are advancing prices beyond the seasonal basis.

CHICAGO

General Market Improvement Felt—Roads Purchase Spot Coal—Heavy Line of Inquiries.

Sales companies report many more inquiries on both steam and domestic sizes, and some noteworthy sales have recently been made. Those who have been putting off storing their winter supply until the last minute have now come into the market, probably having been influenced by the many editorials and warnings issued by the press concerning an anticipated shortage.

Considerable steam coal has been purchased lately. The buyers, however, have all been of one class, namely, the railroads, who, on account of the information at their disposal realize there is going to be a coal shortage. In spite of their poor financial condition they are buying coal on the open market above contract requirements.

Out of town buyers have been coming into Chicago in larger numbers. While but few purchases have been made, the buyer who is away from the big central market is showing some anxiety about the future, and is coming to size up the situation for himself. These out-of-town purchasing agents, as a general rule, represent only the retail dealer, as purchasers of steam coal who have plants outside of Chicago have been conspicuous by their absence.

Pocahontas and Eastern coal receipts continue in large volume, especially the smokeless variety. Smokeless coal is a little stronger than it has been as the lowest figure at which it is now possible to buy mine run is in the vicinity of \$2.65 a ton, which shows a gain of about 25c. over the last few weeks. Anthracite is coming in fairly normal volume although not in as great quantities as is generally the case at this time of the year. It is possible, however, to pick up anthracite at prices considerably below the circular.

CINCINNATI

Holidays Cut Trading—Smokeless Prices Drop—Better Buying Noted.

Labor Day dulled the edge of trade here to a considerable extent. However, the volume of the movement is greater than for some time past with the bulk of the tonnage going to fill contract requirements and quite a little extra for the Lake.

The spot bituminous market has been fairly even, although West Virginia slack is again on a basis of competition with the Kentucky producers, prices ranging \$1@1.45 while the Kentucky offerings are \$1@1.25. West Virginia lump and block is \$2.75 @ \$3.50; Kentucky holds firm at \$3 @ \$3.50 and mine run \$1.60 @ \$1.70, while that from West Virginia is \$1.60 @ \$1.75.

Considerable adverse comment is heard on the drop in smokeless to \$4.50 @ \$5 for lump and egg and \$3.50 for nut, the country dealers who had stocked up being the chief critics. Mine run can be had in the open market for \$2.75. Slack is \$1.50 @ \$2.50.

Retail prices have not shown any great disposition to change and one dealer gave it as his opinion that even though the prepared sizes of smokeless had fallen off the market would have to reach a \$4 level before there could be any great change.

CLEVELAND

Industrial Demand Improving—Retail Trade Shows More Life—Lake Movement Still Lags—Prices Recover Slightly.

With steel mills operating at the highest rate in months, and with paint, textile and a few other industries experiencing what is believed to be the beginning of a recovery in trade, there is a decidedly more cheerful sentiment spreading in the coal markets. Sufficient inquiries are appearing to indicate that industrial consumers are taking much

more interest in the market. Many of them are still clinging to the hope that freight rates will drop and bring prices down with them. On the whole, consumers are feeling their way cautiously, many of them asking for bids on requirements which they expect to cover just as soon as conditions in their respective lines justify definite manufacturing schedules. In the meantime such coal as is moving represents immediate needs.

The railroads are buying more freely. With the exception of slack, which has reacted from the peak of around \$2 touched a few weeks ago, all grades of steam coal continue firm with stiffening tendencies appearing here and there.

Retailers report perceptible gains in buying from domestic users in the last week or so. There is no rush and none is expected before cool weather actually arrives, but the volume of orders received daily is gradually swelling. An advance of 15c. for anthracite stove brings the retail price to \$4.40 and has been the only change of retail quotations.

Bituminous receipts show an increase for the week ended Sept. 3, both in industrial coal has not been sufficient dustrial 563 cars, retail 263 cars, total 826 cars; as compared with 660 cars the week preceding.

COLUMBUS

Domestic Demand Fair—Steam Trade Dull in Every Locality—Screenings Firm—Lake Trade Tapering Off—Prices Unchanged.

The domestic demand is still the chief feature of the Ohio coal trade, a few cold nights having brought householders to the realization that winter is not far off.

Retail prices are strong at former levels with smokeless in the lead. Pocahontas lump retails from \$9.50 to \$10. while anthracite is quoted at \$15. Coke sells around \$11.50 to \$11.75. West Virginia splints are delivered at \$7.50 while Hocking lump is quoted at \$6.50.

Tonnage from Ohio mines to the Northwest is very much reduced. During the week ending Sept. 3 the Hocking Valley docks at Toledo loaded 116,020 tons, as compared with 148,611 the previous week, making 3,084,653 tons for the season, a gain over last year of 1,000,000 tons. The T. & O. C. docks during the same week loaded 29,635 tons as compared with 48,028 tons the previous week, making a total of 808,226 tons for the season.

Steam coal demand is slow in resuming; railroads are taking only a limited tonnage, while there is a steady demand for screenings from public utilities. All colleges and public institutions have been supplied with fuel. Small sizes show a little strength as a result of these conditions. Output in the Hocking Valley, Cambridge and Crooksville fields is estimated at 28 per cent of normal, in Eastern Ohio at 30 per cent and in Pomeroy Bend at 30 per cent.

Southwest

KANSAS CITY

Mines on Short Time—Steam Coal in Small Demand—Advance in Price of Fuel Oil Deters Industrials From Giving Up Coal.

This week has brought little change in the local coal market. Mines are on short time, steam coal being in small demand and the domestic trade not having improved sufficiently to warrant increasing output. A slight advance in fuel-oil prices in several districts has served to deter more industrials from converting from coal to oil fuel.

Mine-run coal is not meeting with much favor as a domestic fuel, but the indications are that consumers will have to fall back on this size in the winter because of inadequate stocking this summer. Prices of Kansas lump are \$4.75, mine-run \$4.25, slack, \$2.50. Missouri lump from Bevier is \$4.75, mine-run, \$3.85 and worked slack \$3.65. Arkansas lump is quoted at \$7.50, mine-run \$4.50 and slack \$2.50.

South

LOUISVILLE

Better Cotton Prices Expected to Help Coal Business—Railroad and Utility Consumption Improves.

With prices for cotton up to 19c. a pound and better on futures the situation in the South looks much brighter, and the operators are encouraged. So far textile mills or other consumers have not increased orders, but the outlook from the standpoint of general consumption is better, due to the fact that the South will have money.

Railroad consumption is picking up, and gas and utility production is better. Retailers report somewhat better business. Local yards contain more coal than in years past and are buying coal for replacement about as fast as they deliver.

Shippers of coal are afraid that in the event of any material increase in demand the railroads will be unable to supply cars, especially if equipment is not in first-class shape. Reports show that time lost in the Kentucky fields due to shortage of orders, has been decreased by about 4 to 5 per cent in the past two or three weeks.

BIRMINGHAM

Trade Quiet but Improving Slightly—Prices Practically Stable—Production Showing Some Gain.

Trade conditions are gradually growing better, but the elements of steadiness and permanency in the upward trend are not thoroughly established as yet. Increased inquiry, has not resulted in a steady buying movement, but improvement in sales has been of a rather intermittent character. Consuming sources are being gradually added, however, as industrial plants are taking

on a steadier stride and the demand will become stronger and more dependable.

Sales are now practically confined to the spot market, and contracts are neither being offered nor solicited. Quotations have become practically stable and are shown in the Weekly Review.

Domestic coal is not moving in a satisfactory manner. The market is dull and discouraging. Prices f.o.b. mines for the month of September show increases of 10c. @ 25c. per ton in most cases on the better grades, though some producers maintained the August schedule and Corona lump shows a reduction of 20c. per ton.

News From the Coal Fields

Northern Appalachian

UNIONTOWN

Still Difficult to Move Tonnage—Movement Is Mostly on Contract—Prices at Old Levels.

Although there has been a complete lack of disorder throughout the Connellsville coke region due to the strike situation which had its origin with the suspension of operations at the plants of the W. J. Rainey, Inc., the strikers have made encroachments at plants of other independent operations adjoining the Rainey plants. (The situation is covered in the news columns.)

Despite the curtailment in operations there has been no reaction in the market and there is as much difficulty as ever in disposing of tonnage produced. Most tonnage is moving on contracts but there is some finding its way to the open market; in those transactions, however, operators are meeting with price resistance consumers seeking to shade a \$3 dead-line figure, which has been fairly well established for standard furnace quality. Off-grade coke is offered at \$2.75 and \$2.85 but standard furnace is commanding \$3 and \$3.25 and operators are holding firmly to those figures. Foundry coke likewise is firm at \$4 and \$4.25, but sales are limited.

There is no demand for coal despite the approach of cooler weather and prices remain at old levels, steam coal being quoted at \$1.55 to \$1.75 and by-product at \$1.85 and \$2.

EASTERN OHIO

Production Lowest Since Last Week in April—Utility and Railroads Place Large Contracts—Healthy Retail Demand.

Production during the week ended Sept. 3 was 346,408 tons, or 55.5 per cent of rated capacity, and 16,000 tons below the previous week; in fact, the lowest since the last week in April.

Cessation of Lake shipping accounts for the falling off in production with no prospect of change for thirty days. The number of loads at lower Lake docks is averaging around 9,000 cars, receipts a little over 1,000 cars, and dumpings 1,500 cars, daily.

While industrial inquiries are said to be sagging somewhat, it is reported

that the Cleveland Electric Illuminating Co., a large public utility, has just closed for another hundred thousand tons for storage, to be delivered during the next few months, and also that the Michigan Central and Baltimore & Ohio railroads have recently contracted for some large quantities of fuel in this field. The railroads are understood to be taking around 40 per cent of the present output of this field.

Lake shippers are now either curtailing or closing down, while domestic coal shippers are increasing operations. Retail dealers report a healthy demand and Ohio's industrial situation apparently is slowly improving. Spot inquiries are not so active and there has been a consequent shading of prices.

PITTSBURGH

Market Stagnant—Asking Prices Unchanged—Business Going to Non-Union Fields.

The labor troubles in the Connellsville region have not affected the Pittsburgh district coal market, which continues altogether inactive, with not enough turnover in the open market to disclose actual prices, so that the market is quotable as of late on the basis of asking prices. While coal demand in general is light there is no question but that a considerable volume of business normally tributary to the Pittsburgh district has been going to non-union fields, particularly Connellsville.

There is no change in the wage situation, operators showing no signs of making a move to open up the matter with the United Mine Workers. It is asserted that many union men have gone from the Pittsburgh district to Connellsville and other non-union districts where they have obtained employment at such wages as are obtainable.

CONNELLSVILLE

Labor Situation Dominates Coke Market—Prices 25c. Higher—Production Increases.

The Connellsville coke market has been dominated by the labor situation, and is up 25c. in the week. (The labor situation is covered in the news columns this week.) As a result of the blowing in of two or three furnaces and the buying caused by strikes the coke market has advanced sharply 25c. and

there is a distinct possibility that further advances will occur. The market is now quotable strong at \$3.25 for furnace coke, either spot or contract, and at \$4.25 as minimum for spot foundry, some brands as formerly commanding \$4.50, all prices being per net ton at ovens.

The *Courier* reports production in the Connellsville and lower Connellsville region in the week ended Sept. 3 at 14,120 tons by the furnace ovens, an increase of 1,420 tons, and at 25,240 tons by the merchant ovens, an increase of 4,080 tons, making a total of 39,360 tons, an increase of 5,500 tons.

CENTRAL PENNSYLVANIA

August Loadings Gain—Union Fields Suffering—Operators Favor Early Break With U. M. W.

A gain of 5,200 cars was made in August over July, the loadings being 56,300. While the gain is slight, the producers accept it with a feeling of optimism and believe that the increase will be maintained to some extent. Quotations are now at their lowest ebb and in the union fields of central Pennsylvania the spot price on all grades is below the cost of production.

The United Mine Workers are sitting tight on their policy of no reduction. This is working great hardship among the miners in portions of the field. It is the general belief among operators that this attitude will bring about a strike next spring and that the only thing left is to break with the union. Many are in favor of breaking now as it would cost the miners, operators and the public the least. Some operators stand ready to wait until the result in the central competitive field is made known.

FAIRMONT AND PANHANDLE

Production Declines—Inquiries for Future Tonnage Encourage Operators—Steel Mill Resumption Significant.

FAIRMONT

Although production was less during the week ended Sept. 3, there were undoubtedly more inquiries for tonnage. The belief prevails that demand will be better in the near future. Current orders, however, were few, contract business still constituting the bulk of production. Dullness was not strange in view of the small demand for coal at Tidewater and the Lakes.

NORTHERN PANHANDLE

Inquiries were somewhat more plentiful, although having no sequence in increased orders, owing to a decided lull in Lake buying. A gradual resumption of operations at steel mills in the district was relied upon to help matters in the near future.

UPPER POTOMAC

Operating Conditions Unchanged—Spot Market Barred by High Mine Wage Scales.

At the outset of September there was comparatively little change in op-

erating conditions. Virtually all the mines on the Western Maryland were out of commission and similar conditions prevailed in the Georges Creek region. Aside from a few contract orders, high mining rates made it seem unlikely that an early production recovery for spot account could be looked for.

Middle West

MIDWEST REVIEW

Signs of Improvement—Domestic Better but Far from Normal—Labor Unrest Grows.

If one searches carefully it is not difficult to find unmistakable signs of improvement. Professional economists returning from St. Paul and Minneapolis report improvement in that vicinity. Government reports from Seattle, Portland, etc., advise that the raw products from the Northwest, for instance; lumber and fruit, are moving east in a satisfactory manner. In the South the cotton business has taken a new lease on life; and in the Middle West proper, it appears that the steel industry is improving.

These signs of better conditions have not affected the steam market as yet although it is expected that demand will show some signs of improvement during the next two weeks. The railroads are buying more coal in order to prepare themselves for the winter months; and practically all industries who see any gleams of hope for future business are gambling on putting in a small supply of coal at bargain prices. It is expected that improvement will come very gradually, so gradually that it will be hard to notice until it is well under way.

While the domestic situation is much better than it has been in a long time, it is far from normal. The rural population of the Middle West on account of the decrease in the demand for farm produce, are feeling very poor, and are economizing in every way possible.

The average user in the Middle West sizes up coal only by what it costs in his bins, and he knows that coal costs him more today than it did in the pre-war period, consequently, he feels he is being imposed upon and is going to buy just as little as he can.

As we ventured to predict a few weeks ago, trouble can be expected from the Illinois and Indiana fields. It seems there are some mines producing fluorspar down in Hardin County. The operators of these mines have had trouble with their men ever since last November, and the miners of this mineral have enlisted the sympathies of the coal miners in the neighboring field. Several mobs of coal miners from Eldorado and other adjacent points started to march into the fluorspar district, and serious trouble was barely averted. In fact, the situation today is far from settled. These disturbances, coupled with the recent trouble in Sullivan County in Indiana

and in the West Virginia fields show that the coal miners are in an aggressive state of mind and will have to be handled very carefully in order to avoid future difficulties.

INDIANA

Consumers Tardy in Laying in Coal Supplies—Advance of 25c. a Ton on Coke and Anthracite the Outstanding Feature.

At this time of year from 25 to 35 per cent of the domestic winter supply of coal should be in the bins, whereas it is estimated that not more than 12 to 18 per cent has been purchased. Even the railroads are buying slowly and without much spirit in Indiana.

Retailers say a recent advance of about 25c. a ton on coke and anthracite is the only important change in prices in recent weeks. Pocahontas lump coal, selling at the mines at \$5 a ton, to which is added \$3 for freight and war tax, is retailing in Indianapolis at about \$11.25 a ton. West Virginia lump comes in several grades; the best, it is said, sells at the mines for \$3.50 to \$3.75 a ton, and the freight and war tax add another \$2.90, making the price here, laid down, \$6.40 to \$6.65, while the retail price is approximately \$9.50. Indiana lump, which dealers say may be used more extensively this winter, sells at the mines for about \$3.50 a ton. The shorter haul, for which the freight rate is only \$1.26 with war tax, it is understood, makes the chief item of difference in the price of Indiana lump and West Virginia lump. Indiana lump retails here at from \$7 to \$7.50.

WESTERN KENTUCKY

Situation Improving—One-third Shipments on Contract—Difficulty in Moving Screenings—Lump in Fair Demand—Mine Run Somewhat Slow.

Inquiry is somewhat better, and while September business has not picked up as rapidly as had been expected, the situation is showing improvement. One-third the shipments are on contract.

Western Kentucky reports some trouble in disposing of screenings, but lump coal is in fair demand. Mine-run is a little slow. Some screenings have been offered at 85c. a ton during the past few days, but very little is quoted under \$1.10 a ton, the price ranging in some instances as high as \$3.

Middle Appalachian

HIGH-VOLATILE FIELDS

Production Fails to Increase—Better Market Outlook—Labor Disturbances Cause Tonnage Loss—Inquiries Are Heavier.

KANAWHA

Partial paralysis of production was the inevitable outcome of the civil war waged by union miners of the region in

the week ended Sept. 3. During the greater part of the week in the Coal River territory railroad service was inoperative so that coal shipments were literally at a standstill and producers were not able to take advantage of the increase in inquiries.

LOGAN AND THACKER

Despite the fact that the Logan field was upset by the invasion, production averaged about 22,000 tons daily. Inquiries were increasing and more orders were received. The increase was largely of an industrial nature, there being no export business whatsoever.

Williamson production did not reach over 40 per cent of capacity. Market rather than industrial conditions or labor disturbances was affecting production although better railroad fuel orders helped somewhat. Producers as a rule were optimistic of an early betterment in conditions.

NORTHEASTERN KENTUCKY

Steam buying showed more activity than the domestic end. It was very hard, however, to move much mine run and, as there was comparatively little slack available, it was in fair demand. Production on the Big Sandy and its tributaries was not much in excess of 30 per cent.

VIRGINIA

Although inquiries were more numerous and orders were beginning to appear, yet upon the whole, there was little change as compared with recent preceding weeks, the output being not far below 50 per cent of capacity. The bulk of production was on contract or-

ders although mine run was a trifle firmer on the spot market.

LOW-VOLATILE FIELDS

Poor Market Conditions Continue—Demand Not Yet Stimulated—Miners' Strike Affects Production.

NEW RIVER AND THE GULF

Not only market conditions but the uprising in the Kanawha and Coal River regions, causing wholesale desertions from the mines, retarded New River production in the week ended Sept. 3. Tidewater demand was extremely dull, not even much bunkering coal being shipped.

Poor demand held Winding Gulf production down to less than 50 per cent of capacity. Tidewater shipments were next to nothing, and the low prices prevailing prohibited a large movement even to Western markets.

POCAHONTAS AND TUG RIVER

Pocahontas production was less during the week ended Sept. 3, "no market" losses aggregating over 235,000 tons. There was no demand at Tidewater either for commercial or bunkering purposes and while the bulk of the output went to Western markets, the demand was not as strong as it might have been. There was an extremely poor market for slack, while mine run was soft.

A revival of activity in the steel and iron trade exerted a beneficial effect on Tug River production, which was being retained at a little less than 80,000 tons a week. Few mines were down entirely but half-time was about

the maximum. Much of the output went to the West.

Southern Appalachian

SOUTHEASTERN KENTUCKY

Little Change in Volume of Shipments—Inquiries Plentiful—Not Much New Business—Car Shortage Past.

So far as actual shipments are concerned, the first week of September brought little or no change. Inquiries are more plentiful but result in little new business. Retail yards are taking a minimum of domestic coal and steam sizes continue to drag.

Cars are more plentiful on the Louisville & Nashville R.R. than for the past week or so and the fear of an immediate car shortage, which was apparent a week ago, seems to be over for the present.

West

UTAH

Business Picking Up—Uncertainty as to Prices—Good Operating Conditions.

Although business is considerably better, dealers have not experienced the rush that was expected. Many of the producing companies report 65 per cent running time.

The Independent announced an increase in price at the mine some weeks ago, but the company does not appear to be insisting upon it.

News Items From Field and Trade

ILLINOIS

Announcement has been made by Illinois State Director of Mines and Minerals Robert Medill, of the appointment of J. Mulligan as member of the state mining board, to succeed William Turner, who died recently. Mr. Mulligan is a resident of Decatur.

C. E. Oleson, formerly of the Old Ben Coal Corporation and the Interstate Coal & Dock Co., has been made salesman for northern Illinois of the Lake & Export Coal Sales Corporation.

Development work in the new No. 12 mine of the Madison Coal Corporation, in Williamson County, continues steadily, and it is predicted that by the first of the year this mine will be producing 2,000 tons daily.

A party of mining men from Great Britain, France, Belgium, Italy and South American countries, have been in Franklin County recently, making an inspection tour of the mining plants. They were accompanied by H. Foster Bain, Director of the United States Bureau of Mines and Minerals, Thomas Moses, general superintendent of the United States Fuel Co. and Roy L. Adams, chief engineer of the Old Ben Coal Corporation. Among those visited was the Middlefork mine and washer at Benton, Old Ben mines at West Frankfort and Zeigler and the Orient mine of the C. W. & F. Coal Co. The visitors were impressed with the modern collieries and improved methods of production in Franklin County.

The new shaft of the Southern Gem Coal Corporation, at Pinckneyville, has reached coal, and the company is now

ready to begin hoisting. This company has recently leased mines at Cutler, Tamaroa and Pinckneyville, in Perry County, also operating mines in Franklin County.

INDIANA

Fire of undetermined origin destroyed the general store of the Coal Bluff Mining Co., at Coal Bluff. The entire stock of goods also was lost. The loss was estimated by Terre Haute officials of the company at about \$25,000, all of which was covered by insurance.

Lex Sherwood, formerly engineer for the Vandalia Coal Co., at Sullivan, Ind., has withdrawn from the company and has gone in Terre Haute, where he will engage in the engineering business with Willard Rentzes.

The Pike County Coal Co., operating the Atlas mine, has resumed operations on a normal basis. Additional miners are being added to the working force.

KENTUCKY

In the involuntary petition in bankruptcy filed against the Sun Coal Co., of Louisville, it is claimed that the company preferred J. W. McCulloch and P. R. Lancaster over other creditors in July, 1920, when a mortgage was executed on the company's property for \$25,000 to McCulloch and Lancaster but not filed or recorded until July, 1920. McCulloch and Lancaster were among the organizers of the company, later selling their interests to C. F. Lowther, who is still president. J. O. Beubauer is treasurer. Lowther, with Lancaster and McCulloch, originally formed the company.

The Kingston Coal Mining Co., at Morton's Gap, has amended its articles of incorporation to extend the life of the corporation seventy-five years.

The Linton Collieries Co., of which E. M. Mogg, of Indianapolis, is president, is reported to plan development of 100,000 acres of coal land.

The Fayette-Jellico Coal Co., Anchor, capital \$100,000, has been chartered by Lee Congleton, Mary F. Congleton, Claude Congleton, all of Lexington.

The Black Mountain Coal Corporation, of Virginia, has been authorized to operate at Keavir, Harlan County, as a foreign corporation.

The new Alex Y. Malcolmson Coal Co., recently incorporated in Louisville, is headed by some very able interests, the firm having as its head Alex Y. Malcolmson, of Detroit, formerly secretary of the Ford Motor Co. His brother, George W. Malcolmson, is vice-president, and M. J. Campbell, secretary-treasurer, is also a Detroit man. The sales manager is Louis A. Powell, formerly sales manager for the H. L. Cory Coal Co., of Chattanooga. The company will be agent for the Harlan Gas Coal Co., operating in Harlan, with an output of 25 cars daily.

The Kentucky Diamond Coal Co., of Corydon, Henderson County, capital \$100,000, has been incorporated by Alfred G. Merritt, V. E. Chappell and Paul Eldridge, the former two of Corydon, and the latter of Nashville.

A. G. Funk, of the Funk Coal Co., Pikeville, Ky., and with several operations on the Big Sandy, has returned home after several weeks spent at French Lick, Ind., where he went for his health.

MARYLAND

Floyd J. Patton, of the Patton Coal Co., Fairmont, W. Va., was in Baltimore, recently on a business trip. Mr. Patton made the trip by automobile.

The Big Vein Coal Co. has been formed by Lonaconing men with a capital of \$100,000. The incorporators are John L. Casey, Robert T. Love and Hugh A. McMullan, Jr.

C. H. Jenkins of Fairmont, secretary and treasurer of the Hutchinson Coal Co., spent the first few days of September at Deer Park, Md.

MINNESOTA

The Superior Coal & Dock Co. has announced that the remodeling of its Duluth dock will be completed early in September. The dock will then be ready to take coal for the winter supply.

J. W. McWilliams, of the Winnett Coal Co., Pittsburgh, was a visitor in the Twin Cities recently.

W. H. Godwin, sales manager of the Carnegie Coal & Dock Co., made a recent inspection tour of the company's docks at Duluth-Superior harbor. Mr. Godwin was optimistic over the possibilities of a good trade this winter despite the late start in selling.

MISSOURI

The Farmers & Merchants Bank of Spickard is sponsoring a movement of citizens in the sinking of a shaft near there for a mine. The shaft is down 84 ft. and has about 40 more to go.

The Charitan Coal & Coke Co., of Marcelline, has preliminary plans under way for the construction of a new tippie. George Green is president.

NEW YORK

Stroud & Co. has removed to 43 Exchange Place, New York City.

Colonel E. O. Dana, head of the Campbell's Creek Coal Co., Cincinnati, is spending a vacation at Lake Placid in the Adirondacks.

George M. Dexter, of Dexter & Carpenter, 12 Broadway, New York, and Mrs. Dexter sailed recently for a sojourn in Europe.

E. H. Zimmerman, New York sales manager of the Imperial Coal Corporation, Whitehall Building, is back at his desk after a two weeks' vacation spent in New England and Canada.

New York, N. Y.—J. Wörner & Co., of Budapest, Hungary, handlers of machinery, are interested in coal pulverizing equipment. Catalogs, specifications and prices, as packed for export are wanted on this product. Their selling field on their own products covers Hungary, the Balkan States and Russia. Until Sept. 20, information can be sent to L. J. Caldor, 348 Madison Ave., New York; after that to the headquarters at Budapest.

John P. Creighton, secretary and treasurer of the Johnstown Coal & Coke Co., was in New York City several days recently.

Dr. Henry M. Payne, who is now in Mexico on consulting work, advises that he is having an interesting trip, having covered twelve states of Mexico. He has traveled over 200 miles on muleback through Jalisco and the new state of Nayarit, formerly Tepic. He will return to New York on Sept. 26, on the SS Orizaba via Vera Cruz.

OHIO

After a trial lasting three weeks in Superior Court at Cincinnati, a jury returned a verdict in favor of the Wyatt Coal Co., Cincinnati, for \$6,441.57 against the McBard Coal Co. The Wyatt company sued a year ago for \$5,991.57 damages in connection with a coal contract with the McBard company. The latter filed a cross petition in which it claimed \$24,000 damages against the plaintiff upon a coal contract in 1918, when the Fuel Administration had charge of the coal industry. The jury allowed nothing on this cross petition, giving judgment to the plaintiff for the amount claimed, with interest.

F. W. Braggins, president of the Lorain Coal & Dock Co., was a recent visitor in Cleveland.

J. C. Heinlein, Bridgeport, Ohio, president of the Belmont County Bar Association and also prominently identified with the coal industry of Eastern Ohio, entertained members of the Bar Association at an outing held on his estate east of St. Clairsville.

The Landreth Bros. Coal Co., of West Park, near Cleveland, has been chartered with a capital of \$25,000 by T. R. Landreth, Jr., Harry E. Landreth, A. R. Landreth, Alma F. Landreth, and Florence M. Landreth.

G. H. Marting, of the Logan-Pocahontas Fuel Co., was in Cincinnati recently.

W. E. Darnaby is now associated with the Southeastern Coal Co., of Cincinnati, as vice-president in charge of sales. Mr. Darnaby has been connected with the R. O. Campbell Co., of Atlanta for many years.

W. W. Ruby, secretary of the Chesapeake and Virginian Coal Co., was in Cincinnati recently attending the funeral of his father.

W. E. Tytus has been made general sales agent for the Sunday Creek Coal Co., of Columbus, succeeding J. R. Fitzer, who was compelled to resign because of ill health. Mr. Tytus has been connected with the company in the capacity of purchasing agent.

William Robinett, of Jacksonville, Athens County, Ohio, has been named chief state mine inspector by the newly appointed Director of Industrial Relations Tetlow. He succeeds Jerome Watson, of Belmont County. Mr. Robinett is president of the Hocking Valley District of the United Mine Workers.

PENNSYLVANIA

The Bird Coal Co., has put into operation its new tippie at the Kelso mines along the Windber line. This tippie cost between \$40,000 and \$50,000.

The Clearfield Bituminous Corporation, with mining interests in Indiana County, is making living conditions for the miners at Commodore, the new mining town, very comfortable and convenient, at a minimum cost. The town was named Commodore in honor of Commodore Vanderbilt, the founder of the New York Central, whose interests are backing the building of the town. Substantial houses are being erected and these will be rented to the miners at a rate of \$14 per month.

Central City, Somerset County, the new town being developed by John Lochrie, the Windber coal operator, is fast becoming a modern city. The mines are being operated by the Reitz Coal Co., one of Mr. Lochrie's several interests. In building the model town, houses of the most modern types are being constructed and recreation centers and a swimming pool are included in the plans. No excuse is being spared in making Central City an ideal home town for the miners.

The H. C. Frick Coke Co., has resumed operations at its Lambert Mine, between Uniontown and Connellsville. The Hillman Coal & Coke Co., is preparing to resume operations at the Thompson No. 2 and Tower Hill Connellsville No. 2 mines, between Brownsville and Uniontown. All these mines have been idle for several months.

Effective Aug. 15, George J. Kelly, formerly general manager of the Consolidated Fuel Co., the Ohio subsidiary of the Bertha Coal Co., became manager of the Fuel Inspection Department of the Standard Coal Sales Co., of Pittsburgh, Pa. Mr. Kelly began his coal career in the mines of the old Pittsburgh-Buffalo Co., studied engineering, later becoming superintendent and general manager of the Consolidated company. In his various capacities, Mr. Kelly has planned and installed several of the mines now operated by the Bertha interests.

The Schuylkill Valley Coal Co., through A. B. Benesch, president, Schuylkill County, has notified the office of the Secretary of the Commonwealth of an increase in indebtedness from nothing to \$150,000. It has also increased its capital stock from \$5,000 to \$500,000.

The Silver Lake Coal Co., has increased its indebtedness from nothing to \$200,000, Jesse W. Powell, treasurer, Philadelphia.

The Rainey-Wood Coke Co., has increased its capital stock from \$3,800,000 to \$3,950,000, Scott Stewart, treasurer, New York City.

W. K. Field, president of the Pittsburgh Coal Co., and John A. Donaldson, connected with the same company, returned from Europe on the Olympic recently.

Wilbur A. Marshall, of W. A. Marshall & Co., inspected his mines near Johnstown, Pa., recently.

Stephen Arkwright, of the Arkwright Coal Co., was visiting relatives at Mt. Pleasant, Pa., recently.

Edingham P. Humphrey, oldest son of John M. Humphrey, president of the Lehigh Valley Coal Co., has been made general superintendent of the five collieries of the J. P. Wentz Coal Co., with headquarters in Hazleton.

UTAH

The Pleasant Valley Coal Co., has been granted a lease of 1,560 acres of coal land in Carbon County under the provisions of the Mineral and Leasing Act, bidding \$50,100 as a bonus. The successful bidder is required to expend at least \$200,000 on the property in the next three years. The Government will receive a royalty of 10 per cent in addition to the bonus.

Sunnyside No. 2 mine of the Utah Fuel Co. is ready to resume production. The mine caught fire a year ago and the company has had to contend with one of the worst coal mine fires in the history of the state.

VIRGINIA

W. H. Stephens, of Charleston, sales manager of the Colcord Coal Co., spent a few days at his old home in Virginia on his annual vacation.

The Norfolk office of the Weston Dodson Co. is closed as of Sept. 1. J. Luther Neel, former manager of this office, died in Norfolk recently, leaving the firm without a local representative. The decline in the coal business is given as the reason for the company's suspended operations.

Virginia coal will be mined on an extensive scale by the Superior Coal Corporation, which has been chartered at Roanoke. This is a \$2,000,000 company, with Clyde E. Smith, of Pulaski, president, and R. L. Leger, secretary, Roanoke.

WEST VIRGINIA

A. S. Knowles of New York, head of a well known firm of testing engineers, was a visitor in the Fairmont region during the early days of September.

H. S. Gay, general superintendent of the Gay Coal & Coke Co., operating in Logan County, has returned to his headquarters after a business trip to Baltimore.

H. P. Wolfburg, in charge of the sales department of the Lake & Export Coal Corporation of Huntington has returned to his Huntington headquarters after a trip to Chicago and other Western markets.

Following his graduation from Yale, Austin King, Jr., has been appointed purchasing agent for the numerous companies in which his father, A. J. King, of Huntington, is interested.

Work having been completed on the new plant of the Seminole Gas Coal Co., at Haywood Junction, Harrison County, affiliated with the Jewett, Bigelow & Brooks interests, the first coal was mined and shipped from this plant recently. This company will operate in a tract of about 400 acres of low-sulphur coal. The company has put in a belt conveyor which has a capacity of between 2,000 and 2,500 tons a day. An alternating current arcwall machine has also been installed. A. D. Carr of Cincinnati is chief engineer and R. G. Douglas, also of Cincinnati, is general manager.

The Turkey Gap Coal & Coke Co., of Dott, has contracted for the installation of shaker loading booms and refuse disposal machinery at the Wenonah No. 2 Mine at Wenonah.

The ownership of the Smith Coal Co., operating a mine at Levi, on the K. & M., just above Charleston, has changed hands, the assets of this concern having been taken over by the Powells Mountain Coal Mining Corporation, a Baltimore concern. New equipment is to be installed at the Levi plant with a view to increasing the production of coal.

Preparations are being made by the Cascade Coal Co., with mines at Cascade in the Kingwood section, to resume operations, the company having been engaged in cleaning up its mines during recent weeks in preparation for such resumption.

General improvements are being made at the plant of the Leevale Coal Co., of which D. H. Morton, of Charleston is general manager. This plant is at Leevale and at that point in connection with the remodeling of the tippie, shaker screens and a loading boom are being installed.

WISCONSIN

The Central Coal Co., of Milwaukee, who received very little Lake coal during the period of the war and up to this year, has unloaded a number of cargoes and the Kanawha Fuel Co., who has not docked a cargo of Lake coal for the past two years is preparing to receive a number of cargoes between now and the close of navigation.

Safe crackers robbed the office of the Flatley Brothers Coal Co. of Green Bay, of \$440.00 in cash, and \$300.00 in Liberty Bonds.

The Great Lakes Coal and Dock Company, at Superior, has erected about 50 per cent of the structural steel of the new 10-ton man-trolley bridge. The contractors are working on the new 500-ft. extension, which when completed will give the dock a total length of 2,000 ft. and width of 55 ft.

Traffic News

Freight rates on coal from Utah mines to Cherokee, Cal., have been reduced from \$7.87½ to \$7.25 effective Sept. 15, according to an announcement of the Western Pacific road.

The I. C. C. decides that the rate of \$5 to \$5.75 per ton on soft coal from Walsenburg, Col., to Billings, Okla., was unreasonable in that it exceeded \$4.40.

Officials of the B. & O. commercial development department have just completed an analysis showing there are more than 1,000 coal mines on its lines in 54 counties in seven of the states through which it operates and 40 seams of coal are minable with a coal reserve of 25,000,000,000 tons. In West Virginia alone, eighteen billion tons of coal are available for steam and technical use, in mines adjacent to the company's right of way.

Representative Newton, Missouri, in a House speech urging improvement of waterways for transportation, referred to the improvement of the Monongahela River, Pittsburgh, over which 50 million tons of coal have been carried during the past three years, of which 21 million tons were transported last year at 15c. a ton as compared with \$1.25 the rail rate.

Reduction in the freight rate on shipments from the northern coal fields to Boulder, from \$1.21½ to 90c. a ton, on the Union Pacific and the Colorado & Southern railroads in Colorado, has been ordered by the state public utilities commission.

A report and order was made recently by the Pennsylvania Public Service Commission in the case of the New York Central and the Pennsylvania, relative to the rate on bituminous coal in carloads, from the Munson district and the Hawk Run district in Central Pennsylvania on the New York Central to Lock Haven, on the Pennsylvania. The commission holds that a reasonable through rate of \$1.40 should be established and issued an order directing the railroads to file a tariff providing for such a rate.

The Newport Chamber of Commerce is co-operating with the Northern Kentucky Manufacturers' Association and the Cincinnati purchasing agents' organization in protesting against an advance in freight rates on coal by the L. & N. The road increased its rates on June 16, the coal rates to Newport and Covington being raised from \$1.56½ to \$1.90 a ton and to Cincinnati from \$1.75 to \$2.

The I. C. C. has suspended until Jan. 1 proposed reduction in rates on coal from mines on the Detroit, Toledo & Ironton R. R. in the Jackson County and Ironton, Ohio, districts to Detroit and other destinations on that line in Ohio and Michigan. The proposed reductions were: From the Ironton District to Detroit from \$2.57 to \$2.08 per ton; to Toledo from \$2.36 to \$1.91; to Lima, Ohio, from \$2.11 to \$1.71. From Jackson County to Detroit from \$2.47 to \$1.98; to Toledo \$2.26 to \$1.81; to Lima from \$2.01 to \$1.61. The commission says the present rates on coal from mines in the Jackson County and Ironton districts to Detroit, and other points on the Detroit, Toledo & Ironton bear a relationship to the rates on coal from other regions and districts in Kentucky, Pennsylvania, Tennessee, Virginia and West Virginia based upon certain differentials fixed by the Commission.

The commission is conducting an investigation in the matter of interstate rates on bituminous coal in Ohio and in the matter of differentials from Ohio districts with relation to other regions and districts in Kentucky, Pennsylvania, Tennessee, Virginia and West Virginia, and assigned the case for hearing recently at Columbus, together with the suspended schedules in order that the relationship between the rates from the Ohio mines and mines in other regions and districts may be determined.

The commission has declined to suspend the proposed rate of \$1.85 per ton on coal from Ironton, Ohio, applicable on shipments reaching Ironton via the Ohio River to Detroit and intermediate points on the D. T. & I. Railroad.

In a complaint to the I. C. C. the Central Wisconsin Supply Co. of Beaver Dam, Wis., alleges unreasonable rates on bituminous coal from Hymera, Ind., to Milwaukee.

In the complaint of the Pittsburgh Terminal Railroad and Coal Co. the I. C. C. decides that freight rates on bituminous from points in Pennsylvania on the West Belt R. R. to interstate destinations east of Harrisburg are not unreasonable.

Although it has denied the proposal of railroads to increase rates on anthracite from the Wyoming, Lehigh and Schuylkill regions of Pennsylvania to points in New York, the I. C. C. has requested the roads to devise another plan of revision to bring greater uniformity in the rates.

The Jackson, Mich., Chamber of Commerce, in a complaint to the I. C. C. alleges unreasonable rates on bituminous coal from the Ohio and Inner and Outer Crescent fields to Jackson, Chelsea, Cement City, Coldwater, Albion, Fenton, Union City, Newaygo and Petoskey, Mich.

In the case of the Procter & Gamble Mfg. Co., involving rates on coal from Mt. Olive and Staunton, Ill., to Kansas City, Kan., the Consolidated Coal Co. of St. Louis has been authorized to intervene.

In the complaint of the Citizens Coal Mining Co., of Illinois, the I. C. C. decides that the rates on soft coal from complainant's mines A and B, near Springfield, Ill., to Springfield during Federal control were unreasonable and awards the company reparation.

In the case of the West Kentucky Coal Bureau versus the Illinois Central Railroad Co., the I. C. C. has ruled that the rates on coal in carloads, from western Kentucky to points in southeastern Missouri and northeastern Arkansas are prejudicial to the members of the bureau and unduly preferential to mine operators in southern Illinois.

Final surveys have been completed for a new branch of the Illinois Central R.R. extending south from Mulkeytown to Roy-alton and thence east to Zeigler. This branch will open up to the Illinois Central coal fields in the east part of Jackson County and in southwestern Franklin County, together with some recently developed fields in the northwestern part of Williamson County, which in the past has been served by the Missouri Pacific.

The commission has assigned the complaint of the Lehigh Valley Coal Co. and the Lehigh Coal & Navigation Co., for oral argument at Washington, Oct. 26, and the complaint of the Ball Coal Co. for hearing at New York on Oct. 5 instead of Sept. 21.

In the complaint of the Canton Chamber of Commerce, the commission denies on further hearing, reparation on coal shipped from the Pittsburgh and Connellsville districts in Pennsylvania to Canton, Ohio, on rates found in the original proceeding to have been prejudicial to Canton and preferential of Youngstown and Cleveland.

Obituary

Philip Healy, 23 years of age, son of J. Healy, superintendent of the Main Island Creek Coal Co., Omar, W. Va., died recently. Since the war he had been connected with a mining operation in Kentucky.

Warren C. Barber, known as "the grand old man of the New York coal trade," died recently at his home in Brooklyn. In 1916 he joined the selling staff of the Alden Coal Mining Co., and remained with that concern until his death.

Recent Patents

Miners' Electric Safety Lamp. John W. Jones, Cannock, England, assignor to Haslam & Stretton, Ltd., Cardiff, Wales, 1,373,820. April 5, 1921. Filed May 10, 1920. Serial No. 380,328.

Car-Dumping Platform. C. C. Smith. Wheeling, W. Va., 1,380,745. June 7, 1921. Filed Aug. 26, 1919; serial No. 319,945.

Air-Shaft For Mines. A. S. Richardson. Butte, Mont., 1,381,017. June 7, 1921. Filed Dec. 24, 1919; serial No. 347,058.

Combined Screen and Picking Table. R. G. Lawry, Chicago, Ill., assignor to Roberts & Schaefer Co., Chicago, Ill., 1,381,204. June 14, 1921. Filed April 30, 1920; serial No. 377,836.

Coal-Trimming Device. G. B. Holbert. New York, N. Y., 1,382,359. June 21, 1921. Filed April 20, 1918; serial No. 229,734.

Elevating Coal Truck. Anton Kukielski. Jersey City, N. J., 1,382,428. June 21, 1921. Filed Nov. 26, 1919; serial No. 340,806.

Hoisting and Conveying Machinery. C. W. Aveling, Elgin, Ill., 1,382,614. June 28, 1921. Filed May 24, 1918; serial No. 236,302.

Burning Pulverized Fuel. H. G. Barnhurst, Allentown, Pa., assignor to Fuller Engineering Co., 1,382,712. June 28, 1921. Filed June 26, 1918; serial No. 242,099.

Coke Oven. E. Johnson and A. Nordquist, Gary, Ind., 1,382,917. June 28, 1921. Original application filed July 18, 1919; serial No. 311,824. Divided and this application filed May 17, 1920; serial No. 382,112.

Mining-Drill Device. L. F. Verdy, Pleasantville, Ind., 1,383,041. June 28, 1921. Filed May 24, 1920; serial No. 383,716.

Association Activities

National Coal Association

The Membership Committee of the Association, appointed June 1, 1921, is composed of the following:

A. R. Hamilton (Chairman) president, A. R. Hamilton & Co., Commonwealth Building, Pittsburgh.

Moroni Heimer, vice-president United States Fuel Co., Kearns Bldg., Salt Lake City, Utah.

J. C. Brydon, president, Quemahoning Creek Coal Co., Somerset, Pa.

J. H. Amend, Amend Coal Co., Jamison Bldg., Greensburg, Pa.

G. H. Francis, secretary, Inland Coal Co., Greensburg, Pa.

W. H. Huff, president, Victor-American Fuel Co., Denver, Col.

A. W. Calloway, president, Davis Coal & Coke Co., Continental Bldg., Baltimore.

P. J. Quealy, president, Gunn-Quealy Coal Co., Kemmerer, Wyo.

W. H. John, Bridgeport Coal Co., Bridgeport, Tex.

John McElwain, W. J. Rainey, Inc., 52 Vanderbilt Ave., New York City.

The Publicity Committee of the Association, appointed June 1, 1921, is composed of the following:

C. E. Bokus, president, Clinchfield Coal Corp., 24 Broad Street, New York City.

George Harrington, Chicago, Wilmington & Franklin Coal Co., Chicago.

F. W. Lukins, president and general manager Farmers Fuel Co., Rialto Bldg., Kansas City, Mo.

Penna. Philip, secretary, Indiana Bituminous Operators' Association, Terre Haute, Ind.

P. J. Quealy, president, Gunn-Quealy Coal Co., Kemmerer, Wyo.

S. H. Robbins, president, Youghiogeny & Ohio Coal Co., Hanna Bldg., Cleveland.

C. W. Taylor, vice-president, W. G. Duncan Coal Co., Greenville, Ky.

J. P. Walsh, vice-president, Pittsburgh Coal Co., Oliver Bldg., Pittsburgh.

T. H. Watkins, president, Pennsylvania Coal & Coke Corp., 910 Whitehall Bldg., New York City.

E. E. White, president, E. E. White Coal Mining Co., Glen White, W. Va.

W. M. Wiley, vice-president, Boone County Coal Corp., Sharples, W. Va.

Coming Meetings

The Huntington Coal and Industrial Exposition will be held in the Chamber of Commerce Building, Huntington, W. Va., Sept. 19 to 24 inclusive. Chairman of committee, Thomas A. Palmer, Huntington Chamber of Commerce, Huntington.

The American Mining Congress and National Exposition of Mines and Mining Equipment. The twenty-fourth annual convention on Oct. 17 to 22 at the Coliseum, Chicago, Ill. Assistant secretary, John T. Burns, Congress Hotel, Chicago, Ill.

The West Virginia-Kentucky Association of Mine, Mechanical and Electrical Engineers will hold its annual meeting at Huntington, W. Va., on Sept. 20 to 23. Secretary-treasurer, Herbert Smith, Huntington, W. Va.

American Manufacturers Export Association will hold its twelfth annual convention at the Waldorf-Astoria, New York City, Oct. 5 and 6. Secretary A. W. Willmann, 160 Broadway, New York City.

National Safety Council will hold its annual congress at the State House, Boston, Mass., Sept. 26 to Sept. 30 inclusive. Secretary, S. J. Williams, Chicago, Ill.

The Coal Mining Institute of America will hold its annual meeting at Pittsburgh, Pa., Dec. 7, 8, and 9. Secretary H. D. Mason, Jr., Chamber of Commerce Bldg., Pittsburgh, Pa.

An Industrial Relations Conference for all industries in the State of Pennsylvania has been arranged for October 24 to 27 at Harrisburg, Pa., by the Commissioner of Labor and Industry, C. B. Connelly.

The sixth annual convention of the National Association of Purchasing Agents will be held Oct. 10-13 at Indianapolis, Ind.